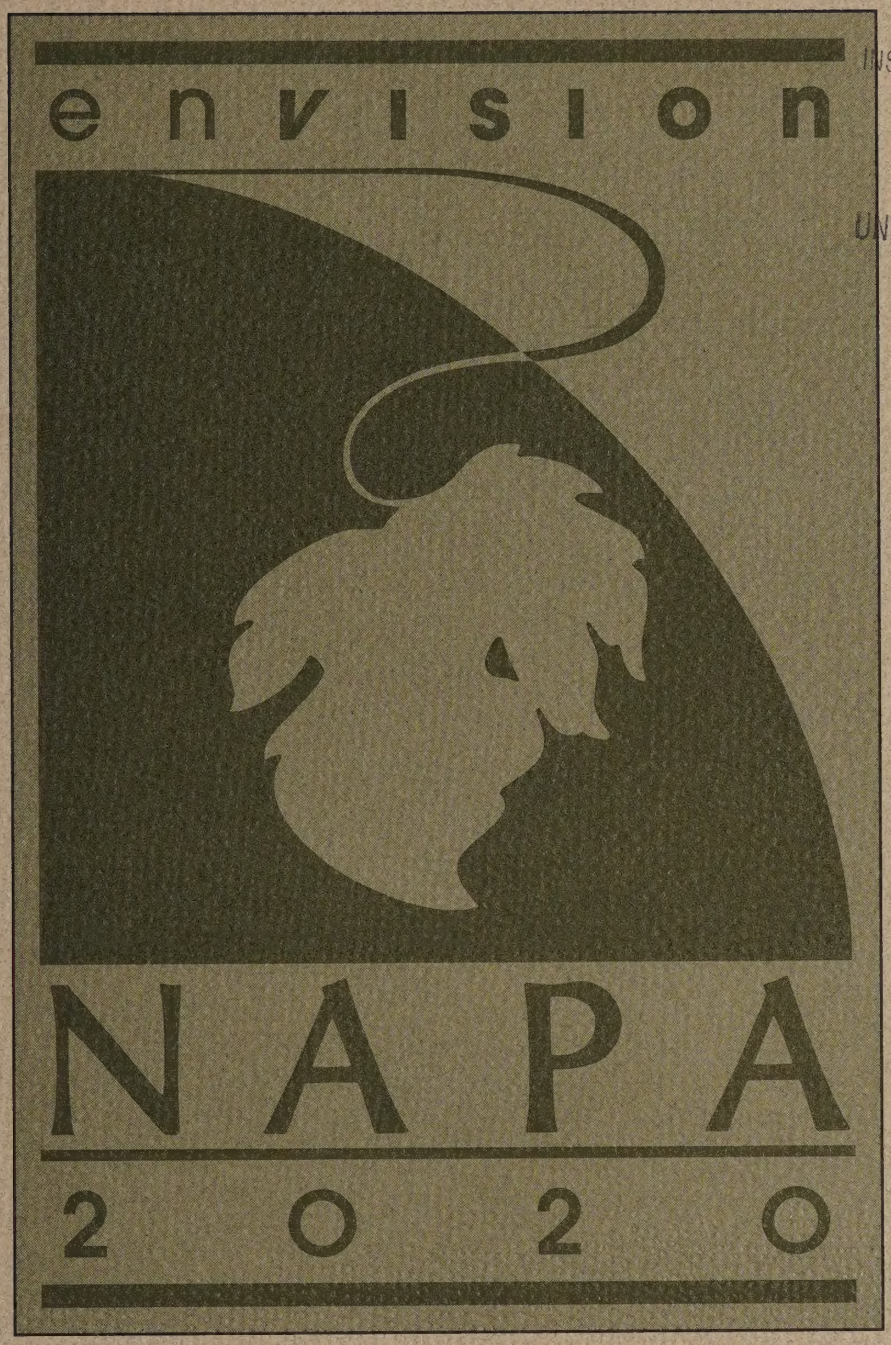

City of Napa General Plan

Background Report

Adopted December 1, 1998

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NAPA

2020

City of Napa General Plan

Background Report

Adopted

December 1, 1998

Final EIR Certification: City Council Resolution 98-238
General Plan Adoption: City Council Resolution 98-239

City Council

Mayor Ed Henderson

Vice Mayor Jill Techel

JoAnn Busenbark

Harry Martin

Brad Wagenknecht

City Manager

Patricia Thompson

City Attorney

Thomas Brown

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CHAPTER 8: HEALTH AND SAFETY

INTRODUCTION

The City Council of the City of Napa adopted a comprehensive update of the 1982 General Plan on December 1, 1998. The General Plan, called *Envision Napa 2020*, consists of two documents: the Policy Document and the Background Report. The Draft Policy Document features goals, policies and implementation programs for each of the General Plan elements. The Background Report provides a description and detailed information on the existing conditions under each of the element categories and provides a basis for the policies and programs in the Policy Document. In addition to these two documents, a Final Environmental Impact Report (SCH # 95-03-3060) has been completed and certified, as required by CEQA, to examine the potential impacts that could result from the implementation of the General Plan Policies. The Final EIR is a Program level document that will be used for future tiering of environmental analysis as projects are implemented under this General Plan.

A Fiscal Analysis (August 1996) was also prepared to provide information on the economic feasibility of the physical and regulatory consequences of the General Plan policies.

This Background Report and the Policy Document represent the City's General Plan Document, *Envision Napa 2020.*

CHAPTER 1
LAND USE AND DEMOGRAPHICS

INTRODUCTION

This background chapter provides a history of land use planning in Napa and describes the city's current land use, social and economic conditions both locally and in the context of the Napa County and the Bay Area region. The chapter also describes regulatory constraints, existing land use patterns, and the components of visual quality and provides a basis for the goals and policies included in the Policy Document of the General Plan.

REGIONAL SETTING

The city of Napa is located along the Napa River in the southern portion of the Napa Valley, 52 miles northeast of San Francisco and 61 miles west of Sacramento (Figure LU-1). Most of the City is on relatively level ground, except the eastern and western edges which extend into brush and oak-covered foothills. The City's northern edge abuts agricultural lands, primarily vineyards. To the south lie agricultural and marsh lands and the Napa County Airport. Regional access to Napa is primarily via State highways 12, 29, 121, 128, and 221.

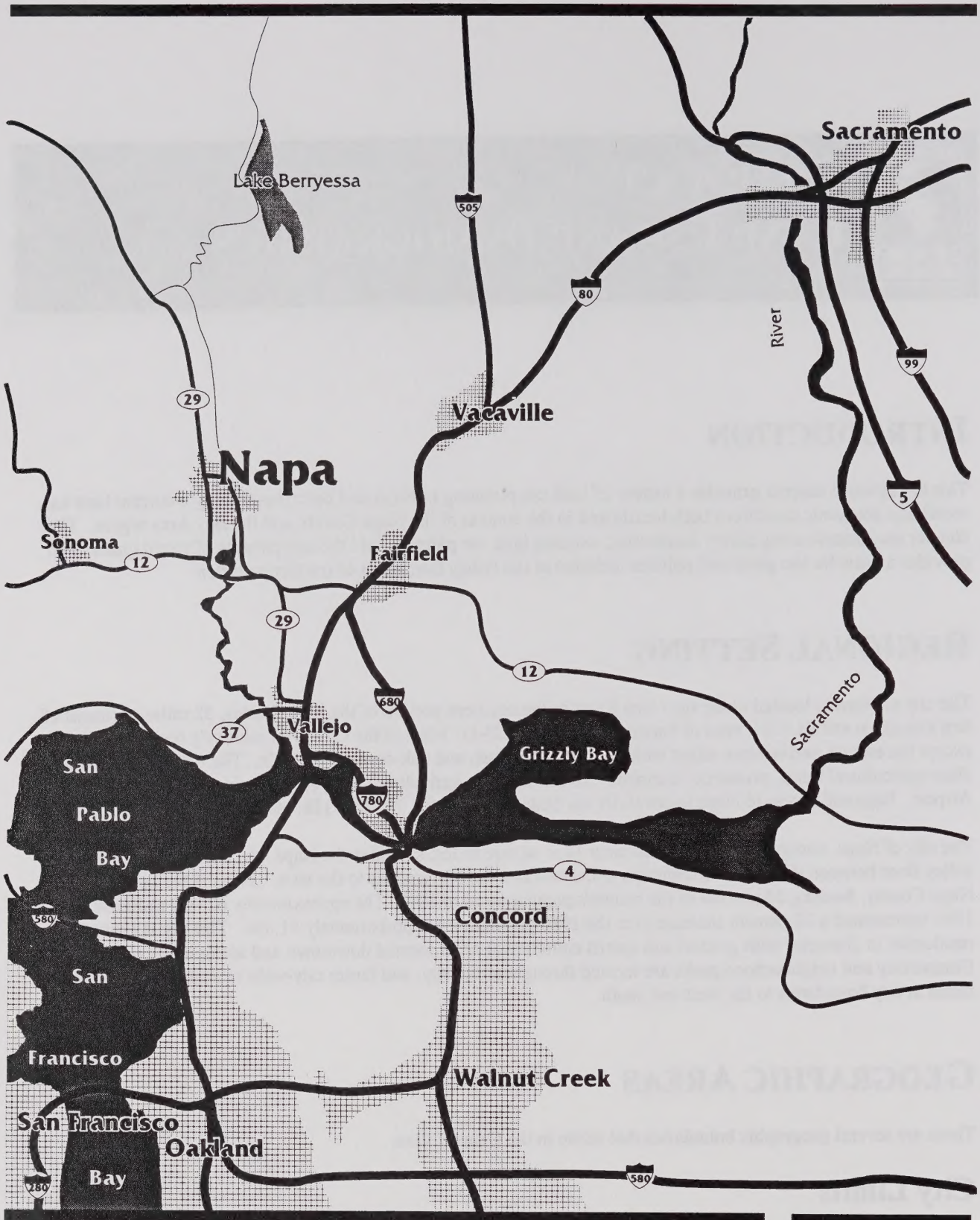
The city of Napa, encompassing approximately 18.2 square miles, straddles the Napa River and occupies the level valley floor between the Howell Mountains to the east and the Mayacamas to the west. Napa is the largest city in Napa County, housing 56 percent of the county's population as of 1993. The approximately 62,000 residents in 1990 represented a 22 percent increase over the 1980 population of approximately 51,000. The city is primarily residential in character with general and tourist commercial areas located downtown and along major roadways. Community and neighborhood parks are located throughout the city, and larger city-wide recreational areas are found at city boundaries to the west and south.

GEOGRAPHIC AREAS

There are several geographic boundaries that relate to the General Plan.

City Limits

As of July 1996, Napa's city limits encompassed approximately 11,600 acres, of incorporated territory. Figure LU-2 show Napa's city limits. Within the boundaries of the city limits, the City includes several unincorporated islands which remain under County jurisdiction. Concentrations of unincorporated land occur in five "island" areas throughout the City .



City of Napa General Plan | Rgional.ds4 | 12/98

Figure - LU 1

Regional Area

North

Legend:

- Watercourse
- Urban Area
- Roadway

1 Mile | 8 Miles | 24 Miles

0 | 4 Miles

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- along El Centro Avenue in the Vintage Planning Area
- in the northeast corner of the Pueblo Planning Area
- in the northeast corner of the Beard Planning Area
- in the central portion of the Terrace/Shurtleff Planning Area
- north of Imola Avenue, also in the Terrace/Shurtleff Planning Area.

Two City incorporated islands, the Hacienda Water Tank on the west and the corner of Silverado Trail and Trancas Street on the east, are located outside the Rural Urban Limit (RUL). Alston Park, although not a true "island", is also incorporated land located outside the RUL.

Rural Urban Limit

The Planning Area for the General Plan is the Rural Urban Limit (RUL) encompassing approximately 18.2 square miles in 1995. The RUL covers almost all of the incorporated areas of the city and also includes parts of unincorporated Napa County. The RUL represents the city's planned ultimate boundary for urban development, based on an advisory measure approved by the City in 1975.

In addition to the RUL exclusions mentioned in the description of the city limits, there are a number of areas in which the RUL varies from the Napa city limits. These areas include undeveloped lands on the eastern edge of the Vintage Planning Area along Big Ranch Road and the southern tip of the Westwood Planning Area along Foster Road.

Sphere of Influence

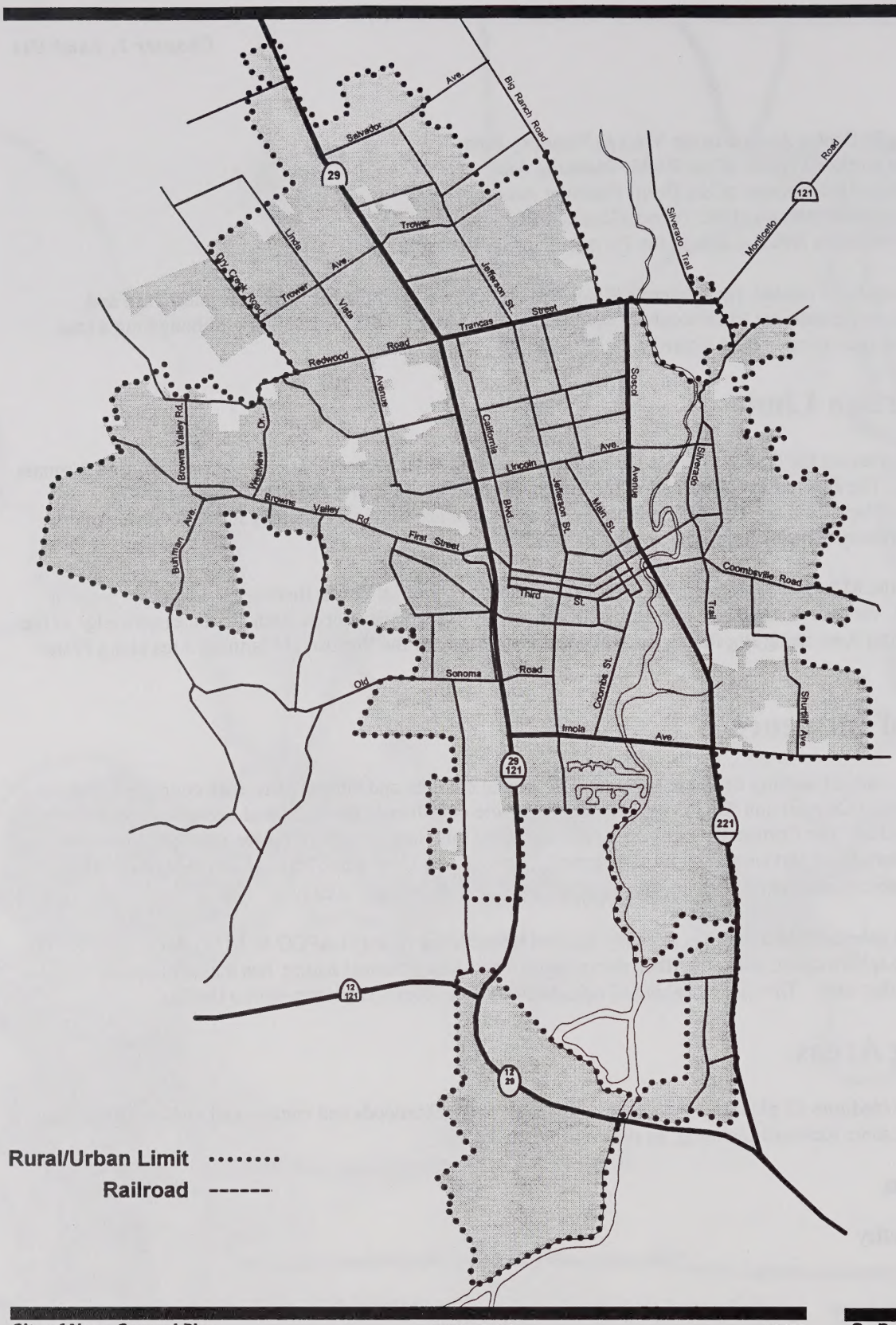
As the basis in part for making decisions about organizational changes and annexations, each county's Local Agency Formation Commission (LAFCO) must adopt a sphere of influence for each local agency subject to LAFCO regulation. The Cortese-Knox Act defines a sphere of influence as "a plan for the probable ultimate physical boundaries and service area of a local agency" (*Government Code* § 5637.5). This means that LAFCO may not approve city annexations outside the adopted sphere of influence for a city.

Napa's current sphere of influence was formally adopted by the Napa County LAFCO in 1977 after a comprehensive sphere study; and, other than minor adjustments of a technical nature, has not significantly changed since that time. The current sphere of influence does not cover all territory within the RUL.

Planning Areas

The RUL is divided into 12 planning areas of genially related neighborhoods and commercial and industrial areas, for purposes of more localized planning, as shown in Figure LU-6.

1. Linda Vista
2. Vintage
3. Browns Valley
4. Pueblo
5. Beard
6. Alta Heights
7. Westwood
8. Central Napa
9. Soscol
10. Terrace/Shurtleff
11. River East
12. Stanly Ranch



City of Napa General Plan LU2a.DS4 12/98

Figure - LU 2a

Incorporated Land & Rural Urban Limit (2020)

North

City of Napa Incorporated land

725' 1/2 Mile 1 Mile 3 Miles

0

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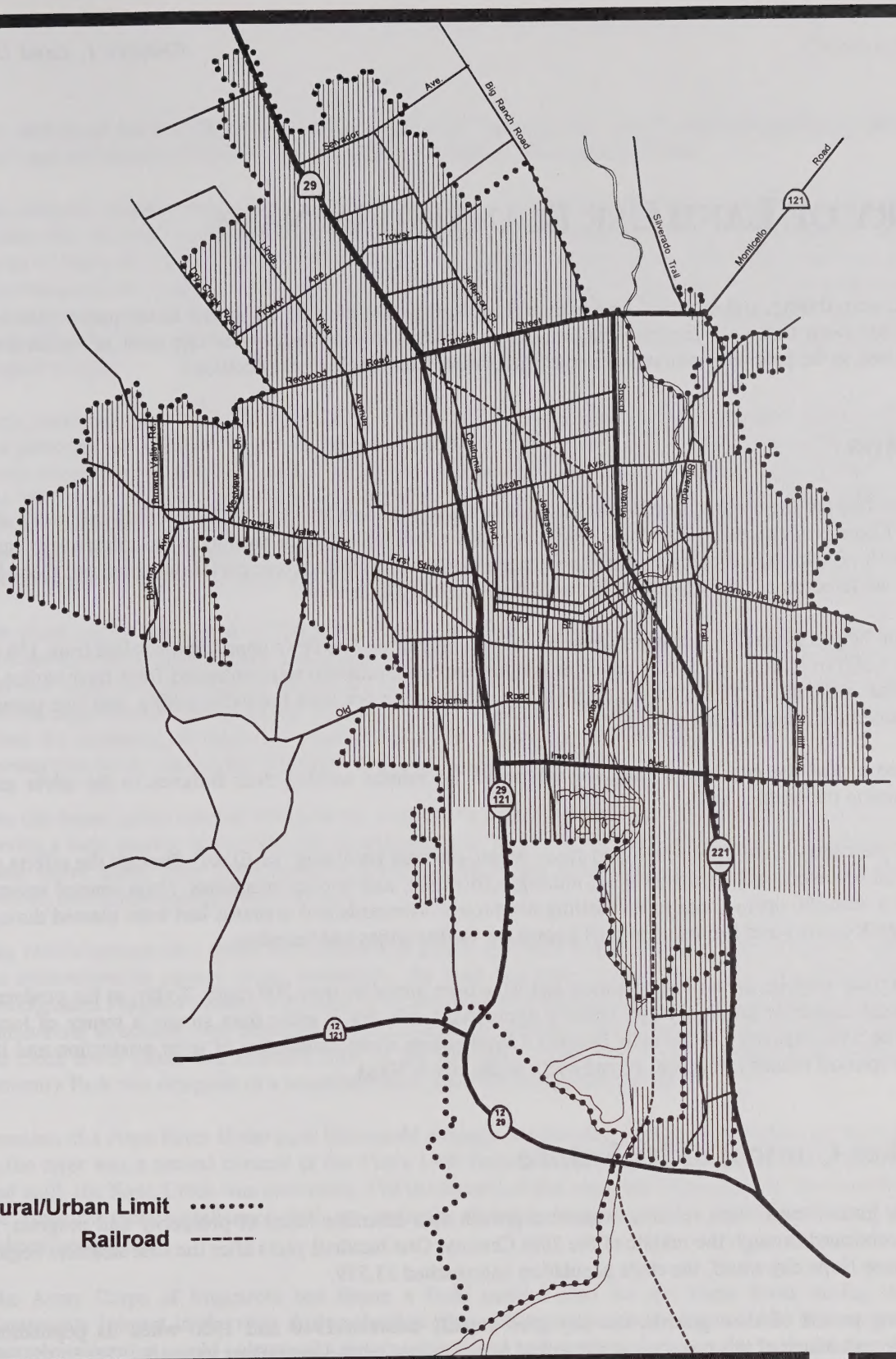

Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan LU2b.DS4 12/98

Figure - LU 2b

Rural Urban Limit (2020) and SOI (1995)

North

Sphere of Influence

725' 1/2 Mile 1 Mile 3 Miles

0

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HISTORY OF LAND USE PLANNING IN NAPA

Today, the location, timing, and extent of land uses and supporting facilities are all subject to the public planning process. This has been true only relatively recently in the city's 150-year history, during most of which little thought was given to the potential community impacts of private land development decisions.

Early Napa

Nathan Coombs laid out the original townsite at the headwaters of the Napa River in 1848. A racing enthusiast and horse breeder, Coombs envisioned a resort that would provide accommodations for patrons of the racetrack he later constructed south of town. Once completed, the new track was never used for commercial purposes and Coombs' new town was not to become a tourist destination until over a century later.

River trade soon helped Napa City become a center of valley commerce. The city's population swelled from 159 in 1850 to nearly 3,500 in its first 30 years. Consumer goods from San Francisco were unloaded from river barges at the wharf located at the foot of Third Street. Agricultural products, timber from the valley's hills, and fine tanned leather were loaded for transport downriver.

River trade also turned the city into a "jumping off point" for miners seeking their fortunes in the silver and quicksilver mines to the north.

By the turn of the century, the once rough and ready wharf city was becoming "civilized" through the efforts of families who had become wealthy from tanning, mining, agriculture, and lumber operations. Napa boasted several fine hotels and a beautiful opera house in its bustling downtown. Vineyards and orchards had been planted during the mid-nineteenth century and the area was well known for its fine wines and brandies.

Some of the original wineries are still in operation and have been joined by over 200 more. Today, as the producer of a highly prized consumer product, Napa Valley's agricultural industry is more than simply a source of local employment. The wine industry has virtually become a local *raison d'etre*; reminders of wine production and its most important spin-off industry, tourism, extend south to the city of Napa

Napa Takes Control of Its Future

During its early history most Napa residents regarded growth as a desirable index of prosperity and progress, a sentiment that continued through the middle of the 20th Century. One hundred years after the first steamers began docking at the new Napa city wharf, the city's population had reached 13,579.

Following a long period of slow growth, the city grew rapidly between 1940 and 1950 when its population increased 64 percent. Much of the growth was a result of war-industry-related operations in nearby Solano County and created the first signs that Napa was becoming a bedroom community within the San Francisco Bay Area.

During the 1950s, master planning was a fashionable way for progressive cities to demonstrate local officials' commitment to a "better tomorrow." In 1952 Napa County and its cities established themselves as leaders in the region when they undertook a joint master planning effort. Like most master plans of the era, Napa's first plan focused on the benefits of growth, expansion being generally regarded as desirable. A 1960 version of the master

plan estimated the total future population capacity of Napa County to be "1,100,000 persons at fairly low densities," and envisioned 125,000 to 220,000 people residing in the county by 1990.

The *Adopted Master Plan of the County of Napa* was a landmark effort for several reasons. Most notably, the master plan process resulted in adoption of coordinated subdivision and zoning ordinances by the County and Cities of Napa, St. Helena, and Calistoga. Nearly two decades before similar concepts became part of California's Government Code, Napans were beginning to recognize the value of coordinated growth management, especially in fringe areas around the rapidly growing cities. Also in advance of state requirements, the new master plan was adopted by the cities and county as the "official guide" and basis for all future land development and "precise plans adopted by law."

Early plans envisioned a future in which the city of Napa would become a full-scale urban center. The master plan had predicted an ultimate population between 136,000 and 150,000 for the "Napa Community," which began at Imola Avenue on the south and was expected to urbanize northward as far as the Orchard/ Salvador areas. In the late 1960s, the City of Napa decided it needed a refined level of guidance for land development and facilities planning decisions. Accordingly, the City engaged a planning consultant who prepared both the City's first general plan and a comprehensive downtown redevelopment plan. The new plans were adopted in 1969 and the City Council appointed itself as the governing board of the new Napa Community Redevelopment Agency.

The plans envisioned the city of Napa evolving into a major urban center. A population of 150,000 by 1990 was forecast with the urbanized area expected to extend "from the Napa marshes on the south, the low foothills to the east and west, to Dry Creek on the north." Consistent with the downtown redevelopment plan, the general plan showed high-rise apartments lining the Napa River in the downtown core. Major facility improvements were also called for, including an east-west cross-town freeway linking two north-south freeways, Highway 29 and a new freeway that would replace the Silverado Trail east of the Napa River.

The city began urban renewal efforts in the early 1970s with the expectation that its revitalized downtown would be serving a local market of over 150,000 people within 20 years. The first phase included streetscaping in front of the retail stores along First Street between Main and Seminary. Decorative brick sidewalks were laid, trees were planted, and street furniture was installed.

The redevelopment plan called for creation of a public use/plaza space in the center of the redevelopment area and the redevelopment agency began assembling the land necessary to accomplish the task. Federal Neighborhood Development Program monies were used to demolish several blocks between First and Pearl streets. A few historic commercial structures were acquired (some through the condemnation process) and demolished to make way for the clock tower plaza and fountain. East of the new plaza, land was acquired adjacent to the Napa River and Veteran's Park was designed as a secondary focal point for downtown activities.

Creation of a Napa River linear park that would strongly reorient the downtown and other parts of the community to the river was a central concept of the City's 1969 General Plan. During building demolition for the new plaza and mall, the Napa Creek was uncovered. The confluence of the creek and Napa River in the downtown core raised the issue of their significance both as aesthetic elements and as possible hazards affecting the downtown redevelopment effort.

The Army Corps of Engineers had begun a flood control plan for the Napa River during the late 1960s. Community interest in the river during the first phase of downtown redevelopment led to a proposal for a flood control project that would enhance the river's recreational and aesthetic functions by incorporating the linear parkway proposed by the 1969 General Plan with redesigned flood control.

Local financing for the proposal was needed to supplement the bulk of the cost, which was to be split among several federal agencies. A flood control bond measure was placed on the ballot in 1975 but was defeated by the voters. Ultimately, redevelopment funds were used to provide landscaping enhancements along the creek, but the planned improvements to the Napa River were never accomplished.

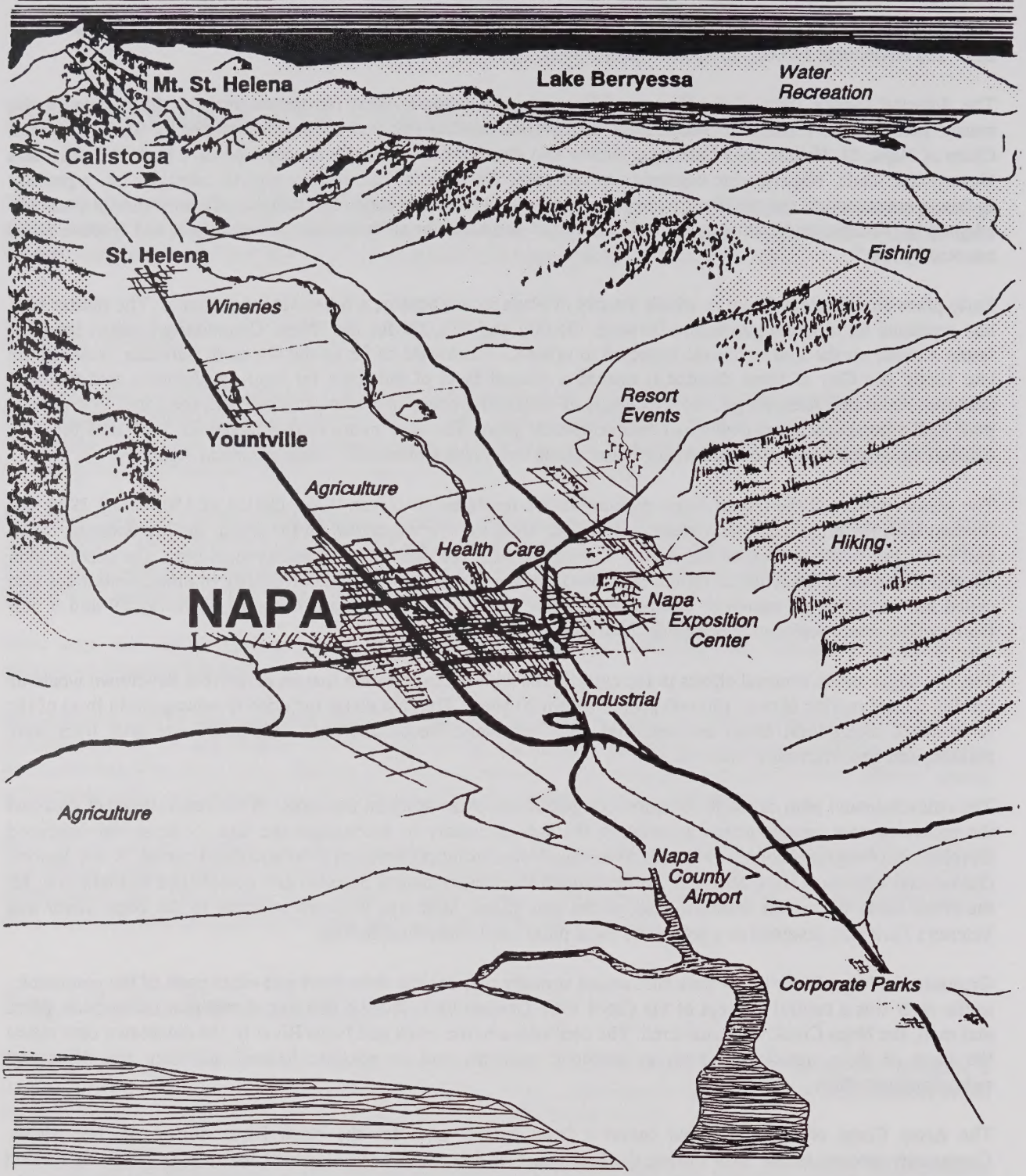

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Figure - LU 3

Activity Centers

North

725' 1/2 Mile 1 Mile 3 Miles

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1975 - A Planning Watershed

With the exception of changes prescribed by its accompanying downtown redevelopment plan, the 1969 General Plan was never realized. Portions of the plan, and the rapid growth it seemed to be promoting, alarmed many residents. Citizens began to mobilize as neighborhood groups to oppose the changes that seemed to be looming on the city's horizon.

These groups began calling for a new general plan that would slow the city's growth rate. In 1973, following state legislation to allow advisory ballot measures, the City Council placed questions on population growth (known as the "plebiscite") on the November ballot. Of the choices available, the option with the least population increase (75,000) was selected by voters as the city's preferred size. The City Council adopted a new general plan in 1975, less than two years after the plebiscite. Consistent with the advisory ballot measure, the plan projected a year 2000 population of up to 75,000 and contained urban development within an urban growth boundary dubbed the Residential Urban Limit Line (RUL).

The State had established local agency formation commissions (LAFCOs) a few years earlier and charged them with coordination of city-county land planning and public utility service delivery. One of LAFCOs primary tasks was establishment of a "sphere of influence" around existing cities. These spheres of influence were primarily intended to function as long term urban service boundaries and annexation areas for cities.

The 1975 General Plan's RUL expanded the sphere of influence concept into a growth control mechanism. Urban uses, which were principally low density residential development, were planned for the area within the RUL and included both city and unincorporated lands. Napa County cooperated with the City by requiring annexation of lands within the RUL prior to urbanization. The County supported the City's growth control efforts since annexation and subsequent provision of urban services by the City would ensure their maximum use and forestall the need to develop additional agricultural or resource land.

During the 1970s, Napa County was also engaged in public policy discussions focused on the potential impacts of rapid growth. As a result of passage of voter-initiated Measure A, which went into effect in 1980, county lands immediately beyond the RUL were planned for resource use, agriculture, or very low density residential development (e.g., 20 acre minimum lot sizes). The County's cooperative stance regarding land use helped focus population growth into the existing urban area. As a result, the city's population share of the county total, which accounted for barely 30 percent in 1950, reached nearly 60 percent by 1990.

Clearly, earlier attitudes about growth and development had changed. By the time significant growth control actions were taken by the City in the late 1970s the City of Napa saw itself as a self-contained, predominately residential community surrounded by a greenbelt of agricultural lands, and wanted to stay that way.

1982 - Growth Control Becomes Growth Management

Since 1975 the City's and County's growth management strategies have focused on limiting population by controlling land supply. A desire to accommodate a year 2000 city population up to 75,000 without expanding the RUL was the major reason for the City Council's decision in 1981 to update the 1975 General Plan.

The 1982 General Plan emphasized a community wide perspective and relied on a series of workshops and subcommittee meetings, in addition to the public hearing process required by law, to obtain community feedback. It envisioned the city of Napa in 2000 as a compact, relatively dense urban area surrounded by a greenbelt of agriculture and open space. The City Council chose this approach because it permitted continued urban growth -- stimulated by job growth in the manufacturing and services sectors -- while it minimized the loss of agricultural lands, environmental impacts, and service costs.

The 1982 plan reasserted the importance of the downtown as the county's primary retail and government center. Renewed commitment to downtown revitalization during the late 1970's had resulted in downtown redevelopment's second phase. The Napa Town Center project was designed and three downtown parking garages were constructed on cleared land.

The building demolitions associated with phase one had helped galvanize the city's budding historic preservation movement and phase two was unmarked by further demolitions of historically significant buildings. In fact, preservation had begun to be considered the preferred alternative in both the downtown and the historic neighborhoods surrounding it. In the mid 1970's the City Council created a Landmarks Preservation Advisory Board (later renamed the Cultural Heritage Commission) to provide project oversight and design assistance to landowners involved in historic rehabilitation. A historic district was created adjacent to the downtown and a survey of the city's historic structures was completed. Reflecting the community's growing concern about preserving the structural remnants of its colorful past, the City included a Historic Preservation Element in its 1982 General Plan update.

The City's 1982 General Plan not only incorporated the RUL (renamed the Rural Urban Limit) policies of its 1975 predecessor, it also reinstituted a yearly residential building permit limitation. The annual limit of 540 units (later revised to 512), was intended to pace the rate of growth so that the plan's A75,000 by the year 2000" population would not be exceeded. However, since the rate of housing production during the 1980s only averaged between 300 and 400 units per year, the plan's residential permit limit was never needed.

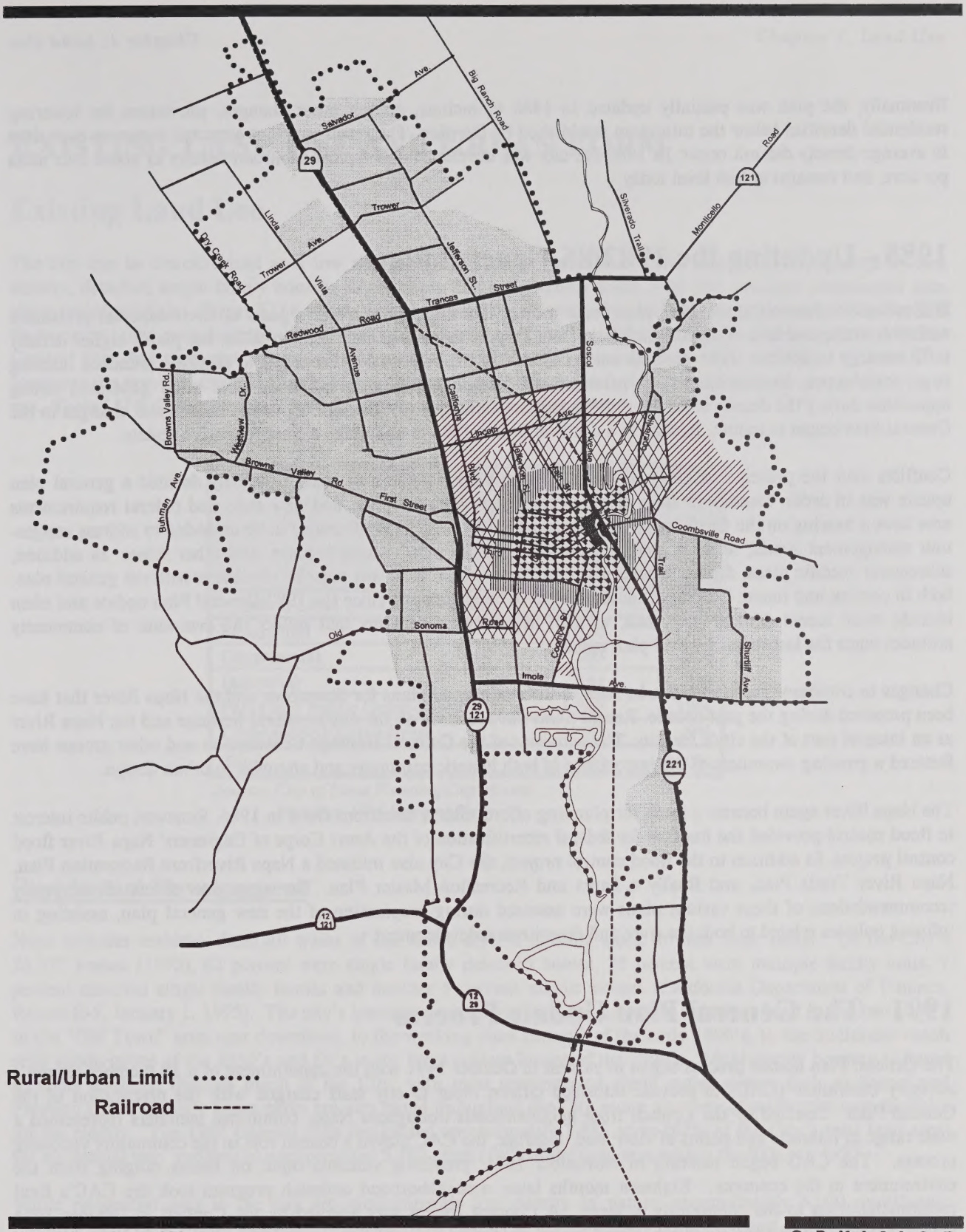
The 1982 General Plan designated the unincorporated areas beyond the RUL as "greenbelt, sending a message to the County that the City viewed the rural areas beyond its borders primarily as open space. As a way to further support the City's commitment to preservation of rural open space, the 1982 update added a "minimum density" provision to the plan's four residential plan map designations. It was felt nearby agricultural lands would be protected from premature development by requiring a minimum amount of use on available residential lands within the RUL.

The 1982 General Plan also raised housing densities in some areas. Higher housing densities were needed to avoid the necessity of expanding the city's RUL in order to accommodate 75,000 people. Densities were also raised to encourage the private sector to supply affordable housing. As a result, a large number of vacant properties were reclassified upward to Medium or High Density Residential (MR at 6-12 units per acre, and HR at 12-25 units per acre). This was expected to increase the supply of affordable housing by lowering per unit land costs.

However, despite the planned increase in future densities, the existing zoning of residential property remained unchanged. More intensive development was to be achieved through rezoning on a case by case basis, either through a single development application that included a zone change or through adopted specific plans.

Because the general plan describes long term objectives for land development, interim development below the minimum was allowed as long as certain conditions were met. Property that was zoned for less intensive use than the minimum prescribed by the General Plan could be developed in conformance with existing zoning as long as the site plan could accommodate additional housing units at some future date. Theoretically, when an area became "ripe" for more intensive development, additional units could be infilled on the site. It was expected that the plan's infill strategy would ultimately result in higher average densities throughout much of the city. It was also thought that the small scale character of the infill development process would make gradual increases in neighborhood densities almost unnoticeable.

As it turned out, the lot by lot infill process was very noticeable to neighborhood residents. The higher density infill provisions of the 1982 General Plan resulted in persistent neighborhood opposition to developments that proposed densities consistent with the new plan, or that could be infilled later. The potential for higher densities in residential areas near the RUL line was particularly bothersome. Coincidentally, these areas contained the largest tracts of undeveloped land, and were often viewed by residents more as buffers than as lands with significant development potential.



City of Napa General Plan | Historic.DS4 | 12/98

Figure - LU 4

Historic Development Pattern

North

	Population
1847	168
1850 - 1870	3,792
1870 - 1900	5,501
1900 - 1930	6,437
1930 - 1950	13,579
1950 - 1970	34,717

0 — 725' — 1/2 Mile — 1 Mile — 3 Miles

Source: City of Napa Planning Department

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Eventually, the plan was partially updated in 1986 to include, among other changes, provisions for lowering residential densities below the minimum established by the plan. The result was that expected increases over time in average density did not occur. In 1980 the city was developed at a typical suburban density of about four units per acre, and remains at that level today.

1988 - Updating the 1982/86 General Plan

Difficulties implementing the 1982 plan made it clear that although the plan's goals of environmental protection and minimizing the loss of agricultural land through growth management remain valid, the plan's higher density infill strategy to achieve those goals is not acceptable to the community. Proposals to construct attached housing (e.g., townhomes, condominiums) in predominately single family neighborhoods have often generated strong opposition during the decade since the plan's adoption. Consequently, pressure to make fundamental changes in the General Plan began to mount, leading to a decision in late 1988 to undertake a comprehensive update.

Conflicts over the principal strategy of the 1982 plan were not the only reason the City decided a general plan update was in order. Conditions have changed since the plan's adoption and new state and federal requirements now have a bearing on the City's long-range decisions. The General Plan needed to be amended to address congestion management issues, new air quality standards, and the jobs/housing balance, and other issues. In addition, subsequent specific plans, facility master plans, and redevelopment plans must be consistent with the general plan, both in content and intent. Several of these plans have been prepared since the 1982 General Plan update and often include more recent demographic data, as well as policy refinements that reflect the evolution of community attitudes since the last major general plan update.

Changes in community attitudes can be seen in the studies and plans for downtown and the Napa River that have been prepared during the past decade. Recent plans have focused on the city's cultural heritage and the Napa River as an integral part of the city's identity. The activities of the Cultural Heritage Commission and other groups have fostered a growing awareness of the importance of both historic continuity and attention to urban design.

The Napa River again became a focus for planning efforts after a disastrous flood in 1986. Renewed public interest in flood control provided the impetus for federal recertification of the Army Corps of Engineers' Napa River flood control project. In addition to the flood control project, the City also initiated a Napa Riverfront Restoration Plan, Napa River Trails Plan, and finally a Parks and Recreation Master Plan. The aggregate effects of the policy recommendations of these various plans were assessed during preparation of the new general plan, assisting in refining policies related to both the river and downtown redevelopment.

1991 - The General Plan Update Process

The General Plan update process began in earnest in October 1991 with the appointment of a 19 member citizen's advisory committee (CAC) to provide informed citizen input to city staff charged with the preparation of the General Plan. Selected by the Council from neighborhoods throughout Napa, committee members represented a wide range of interests and points of view; and, together, the CAC played a central role in the community visioning process. The CAC began meeting in November 1991, providing valuable input on issues ranging from the environment to the economy. Eighteen months later, a neighborhood outreach program took the CAC's final recommendations to the community at large. A Concept Report was adopted by the Council in October 1994 which represented the views of the City Council as well as the wide variety of groups and individuals who participated in the city's two year community involvement process.

EXISTING LAND USE AND URBAN FORM

Existing Land Use

The city can be characterized as a low rise (one to two story building heights) community dominated by low density, detached single family housing in relatively distinct neighborhoods, with low intensity commercial uses along major arterials. Figure LU 6 shows the generalized distribution of urban and non-urban uses in the city and its environs. The uses depicted on this map may not necessarily reflect the land use designations of the 1982/86 General Plan but represent the actual development condition of land within the RUL in 1992. Table LU 1 compares the previous General Plan land use designations by acreage with the actual developed acreage by type of use. Table LU 2 shows the actual land use development by Planning Area.

Table LU-1
Existing Land Area in RUL
1992

General Land Use Classifications	Acres	% of RUL
Residential	7,856	67%
Commercial	963	8%
Industrial	454	4%
Parks and Public Quasi-Public	1,343	12%
Undeveloped/Agricultural	1,037	9%
Total	11,653	100%

Source: City of Napa Planning Department
Based on 1986 General Plan

Residential Development

Napa includes residents from all walks of life and a diverse housing stock to meet their needs. Of the City's 26,577 homes (1995), 62 percent were single family detached homes, 25 percent were multiple family units, 7 percent attached single family homes and another 5 percent mobile homes (California Department of Finance, Report E-5, January 1, 1995). The city's housing stock ranges from the merchant mansions built in the late 1800's in the "Old Town" area near downtown, to the working class cottages of the early 1900's, to the traditional ranch style subdivisions of the 1950's and 60's to the large custom homes of the 1990's. Multi-family housing is found in areas scattered through much of the City, with most concentrated along major streets such as Soscol and Freeway Drive. Mobile home parks are also found throughout the City as are a variety of residential care facilities for the elderly. The 1982 General Plan designated approximately 7,856 acres (67% of the City's total land area) for residential use; residential uses occupied 5,162 acres (44% of the land area within the RUL) in 1992.

While residential uses in the city are predominantly low density in nature, approximately 5,000 multifamily dwelling units exist within the RUL. A considerable number of higher density units exist east of Franklin Street in the Central Napa Planning Area. High density housing in this area is a mix of small apartment complexes and older homes, which have been converted to multi-family use. Many of the large, converted structures are historically significant, providing an affordable and aesthetically unique environment for city residents. In addition, medium density development consisting of duplexes and triplexes, many of which were converted from older single family homes, is relatively abundant in the northern portion of the Central Napa Planning Area.

More recently, multiple family projects have been developed in the Westwood Planning Area south of Imola, north and south of First Street near SR 29, and along Soscol, Lincoln, Central, and Pueblo Avenues in the Beard Planning Area. A few multi-family projects and a mobile home park are located in the northern portion of the Vintage Planning Area and along Solano Avenue in the Pueblo Planning Area. In addition, the Alta Heights and Terrace Shurtleff Planning Areas include several areas where duplex and triplex housing is concentrated.

Throughout the city's historic neighborhoods, which ring the downtown commercial core, large areas are platted in a traditional gridiron residential development pattern. The Fuller Park and other neighborhoods surrounding downtown consist primarily of detached homes interspersed with small attached unit projects. Many of the city's finest late 19th century residences, some of which are listed on the National Register of Historic Places, are found in the vicinity of Fuller Park.

Commercial Development

While downtown functions as the city's only true commercial node, other significant general and tourist commercial areas are located along major arterials, including Trancas Street, Soscol Avenue, Lincoln Avenue, and Imola Avenue West. A mix of tourist and commercial uses can also be found along the east and west sides of the Napa River, from Lincoln Avenue to the north to Imola Avenue to the south. Commercial development along Jefferson Street is dominated by aging linear office/retail (i.e., strip commercial) uses. The 1982 General Plan designated approximately 963 acres (8% of the City's total land area) for commercial development. Commercial uses, including retail and service uses (medical and real estate offices, barber shops and the like) and various types of other commercial uses (wholesale, food processing, etc.), occupy approximately 867 acres, or 7% of the City's land.

Industrial Development

Most industrial development in Napa is in the southern part of the city, in or near the Napa Valley Corporate Park. Other major industrial and heavy commercial areas occupy land along the east and west sides of SR 29 south of First Street, and between Soscol Avenue and the Napa River. A light industrial area straddles the railroad tracks at California Boulevard near SR 29 and Trancas Street. Antiquated industrial and heavy commercial uses, which once included tanneries, are also located between the Napa River and Coombs Street near Spruce Street, and west of Soscol Avenue south of Lincoln Avenue. Approximately 454 acres (4% of the City's total land area) was designated for industrial use in the 1982 General Plan and only about 93 acres, or one percent of city land, is currently occupied by industrial uses.

Park Lands

City parks and recreation facilities are located throughout the city, with the larger citywide recreational areas found at the city boundaries to the west and south. A total of 753 acres of parkland are within the city. Existing regional parks in the city include Alston, Kennedy, and Westwood Hills and Timber Hill parks, totaling approximately 630 total acres. Four community parks include Century Oaks, Fuller, Garfield, and Las Flores, totaling approximately 46 acres. Neighborhood parks comprise the balance of parkland within the city.

Overall, the city of Napa is occupied with primarily urban uses, although land used for agricultural production and grazing can be found to the south in the Stanly Ranch and Westwood Planning Areas. Elsewhere in the city, pockets of intensive short term agricultural use remain in the Vintage, Beard, and Terrace Shurtleff Planning Areas.

Table LU-2 Existing Land Use Summary by Type by Planning Area

PLANNING AREA	1 SF, townhm., farm res'dntl. condo, duplex *Gross Acres*	2 mobile hm., retirmnt. hm., other resid. *Gross Acres*	3 multi-fam. *Gross Acres*	4 hotel *Gross Acres*	5 gen. retail, restaurant, whlsale. *Gross Acres*	6 service, office, governmt. *Gross Acres*	7 schools *Gross Acres*	8 cult. cntr., health club, church *Gross Acres*	9 manu., warehsng. *Gross Acres*	10 ag/mining, forestry, parks *Gross Acres*	11 vacant (total) *Gross Acres*	*vacant (usable)* *Net Acres*	Grand Total *Gross P.A. Acres**
Linda Vista	447.2	81.3	9.1	12.2	9.6	0.8	83.7	0.0	0.0	102.2	81.0	*65.4*	**827.0**
Vintage	575.4	14.2	17.5	3.3	33.7	31.1	99.3	1.3	0.0	97.6	122.3	*96.3*	**995.8**
Browns Valley	1,021.9	1.4	5.2	0.0	1.5	0.0	10.2	12.0	0.0	26.3	151.5	*55.6*	**1,230.0**
Pueblo	399.6	17.2	12.9	2.0	8.5	0.5	17.8	0.0	0.0	1.5	12.8	*10.9*	**472.8**
Beard	352.7	32.7	65.9	12.2	65.8	44.4	40.8	0.3	5.1	51.1	19.9	*12.2*	**690.8**
Alta Heights	424.4	0.0	17.8	1.5	54.2	0.2	2.2	0.0	0.0	3.1	105.6	*68.4*	**609.2**
Westwood	521.1	0.0	56.2	0.8	17.2	0.0	52.6	0.0	17.9	142.8	94.7	*79.4*	**903.2**
Central Napa	516.9	31.0	107.3	10.5	106.7	70.1	19.3	13.7	35.7	59.3	23.5	*0.0*	**994.0**
Soscol	15.1	6.3	4.6	0.0	87.3	6.0	0.0	8.8	7.5	0.0	63.7	*0.1*	**199.2**
Terrace/Shurtleff	365.9	10.2	31.5	2.2	9.8	0.0	49.1	0.0	0.0	20.9	63.6	*49.5*	**553.0**
River East	0.0	0.0	0.0	0.0	51.7	400.6	166.6	0.0	26.4	347.3	113.8	*0.0*	**1,106.3**
Stanly Ranch	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	846.9	5.8	*0.0*	**853.7**
CITY TOTAL	**4,641.3**	**194.2**	**327.9**	**44.6**	**446.1**	**553.7**	**541.7**	**36.0**	**92.5**	**1,699.0**	**858.1**	***437.9***	**9,434.9**
Percent of Total	**49.2%**	**2.1%**	**3.5%**	**0.5%**	**4.7%**	**5.9%**	**5.7%**	**0.4%**	**1.0%**	**18.0%**	**9.1%**	***4.6%***	**100%**

* Acreage are derived from county assessment records and do not include rights-of-way, watercourses, etc., unless included in specific parcels for tax assessment.

* Commercial and Industrial acreages represent actual developed floor area and do not include developed site acreage.Source: City of Napa Planning Department, April 1994

Planning Areas

Existing land use is described by planning areas (Figure LU-6; Planning Area Map).

1. Linda Vista Planning Area: The Linda Vista Planning Area is located in the northeastern quadrant of the City bounded by Redwood Road on the south, State Route 29 on the east and the RUL on the north and west. Until the early 1980's the area was composed of a variety of semi-rural residential uses, scattered subdivisions and, along Solano Avenue, mobile or modular home parks. Development in the area was hindered by a lack of services and poor storm drainage. In the mid-1980's a Specific Plan was prepared for much of the Linda Vista Planning Area and a significant portion of the City's growth in housing stock has occurred here in the past few years. With the exception of a few multi-family and modular housing sites and some commercial uses along Solano, the area is now composed primarily of post-1970 single family detached housing.

2. Vintage Planning Area: The Vintage Planning Area extends from Trancas Street to the City's northern border, west of State Route 29. The most westerly portions of the Planning Area developed in the 1950's and 1960's in single family tract housing types. Somewhat lower density residential development has proceeded in the northwesterly portion of the planning area. Trancas Street at the southern edge of the planning area, is the city's largest retail area with several shopping centers. The City's only full service hospital, Queen of the Valley, is also located along Trancas Street. The southeast portion of the plan area contains some of the City's largest remaining tracts of undeveloped land. The Draft Big Ranch Specific Plan has been prepared for this area (1996) and calls for a mix of single family and multi-family housing types.

3. Browns Valley Planning Area: The Browns Valley Planning Area is located to the west of State Route 29, extending into valleys, canyons and hills. This Planning Area has shared much of the post-1970 residential development with the Linda Vista and Vintage Planning Areas. Aside from a few townhouse developments, this area is composed almost exclusively of single family homes and larger estate homes in the hills. The area is served by a small commercial center located on Browns Valley Road. While there are still some large parcels of relatively undeveloped land, most of the remaining vacant land is highly constrained by steep hills, poor access and a lack of services, especially water at higher elevations.

4. Pueblo Planning Area: The Pueblo Planning Area is delineated by Napa Creek on its southwestern edge, Redwood Road on the north and State Route 29 on the east. Most of this planning area was developed in the 1950's and 1960's and is primarily composed of single family homes. Portions of the area retain the rural character of the original large-lot County subdivisions of one acre or more. The largest Senior, special needs housing development in the City is located near the center of this planning area. Scattered commercial and tourist uses are located along Solano Avenue.

5. Beard Planning Area: The Beard Planning Area is located between Lincoln Avenue on the south, State Route 29 to the west, Trancas Street to the North and the Napa River to the east. This area is probably one of the most difficult in Napa to characterize due to the variety of uses within it. Trancas Street, Jefferson Street and Lincoln Avenue are all "commercial strips" within the planning area. Multi-family housing is found scattered throughout the area, primarily on or near the major streets: Soscol, Trancas, Lincoln, Pueblo and Jefferson. A light industrial area is located in the northwest corner, between California Boulevard and the State Route 29. The remainder of the planning area is composed primarily of a mix of single family housing types, including tract developments of the 1950's, 60's and 70's, traditional subdivisions dating back to before 1940, and large-lot subdivisions which occurred when much of this area was under the County's jurisdiction prior to 1960.

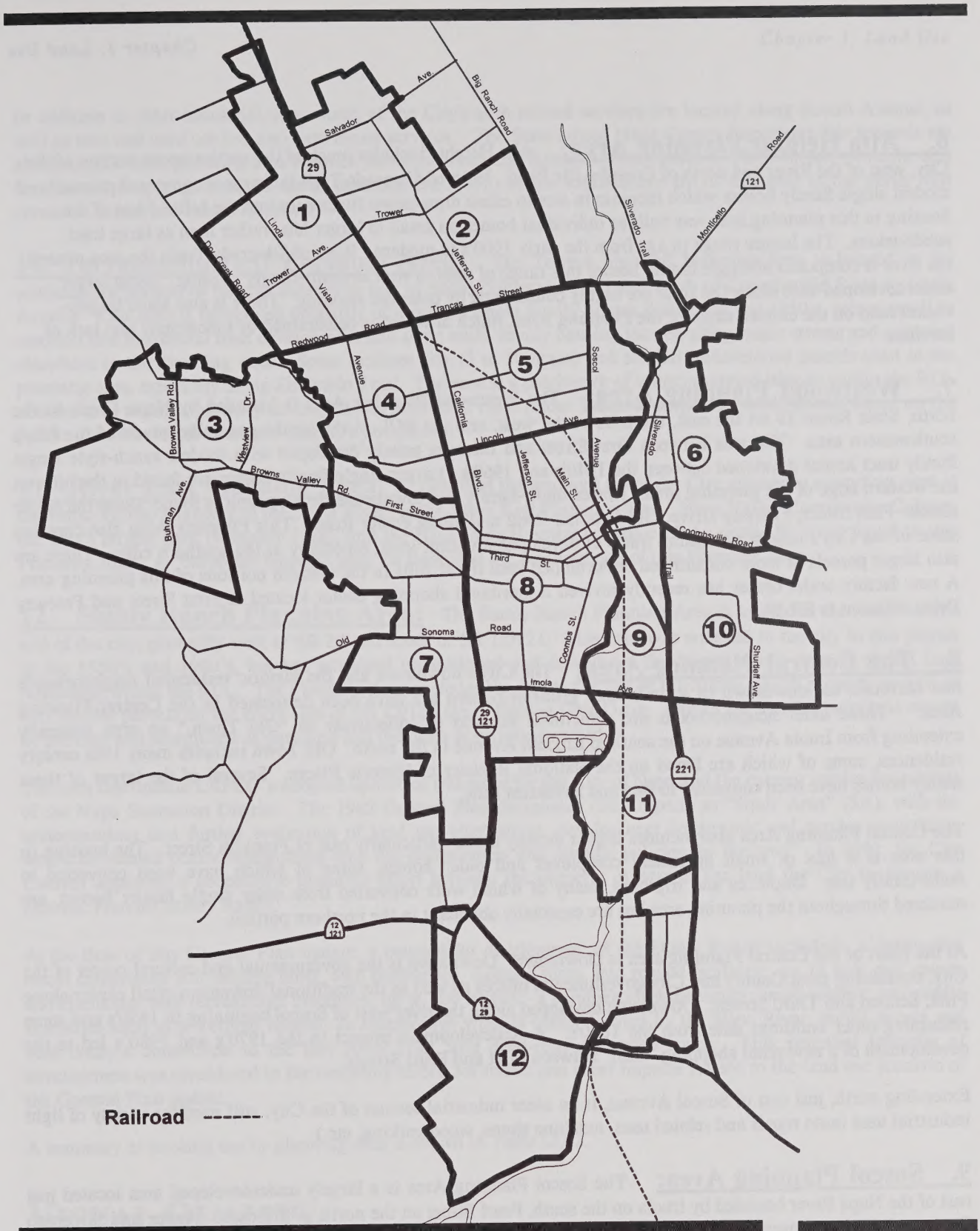

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Figure - LU 6

Planning Areas

North

725' 1/2 Mile 1 Mile 3 Miles

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1. Linda Vista
2. Vintage
3. Browns Valley
4. Pueblo
5. Beard
6. Alta Heights
7. Westwood
8. Central Napa
9. Soscol
10. Terrace/Shurtliff
11. River East
12. Stanly Ranch

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6. Alta Heights Planning Area: Alta Heights includes much of the northwestern portion of the City, west of the River and north of Coombsville Road. West of Silverado Trail this area is composed primarily of modest single family homes which increase in size to estate dimensions further up into the hills. Most of the housing in this planning area was built as individual homes on small to larger lots, rather than as large tract subdivisions. The homes range in age from the early 1900's to modern. West of Silverado Trail, the area nearest the river is composed of single family homes in a range of ages as well as multi-family housing. Some larger underdeveloped sites along the river are highly constrained by potential flooding. There is also some largely-vacant land on the eastern edges of the Planning Area, much of which is constrained by topography and lack of services.

7. Westwood Planning Area: The Westwood Planning Area is bounded by Napa Creek in the north, State Route 29 on the east, the hills to the west, and the RUL to the south; generally, much of the City's southwestern area. The area between First Street and Imola is mostly developed with modest ranch-style single family tract homes developed between the 1940's and 1960's. Larger single family homes are found in the hills on the western edge of the planning area. Newer multi-family and townhouse development is found along the major streets: First Street, Freeway Drive, Old Sonoma Road and along Foster Road. This Planning Area also contains some of the City's largest remaining tracts of developable vacant land, especially at the southern edge. There are also larger parcels of more constrained undeveloped land in the hills in the western portions of this planning area. A new factory outlet center has recently revived a moribund shopping center located at First Street and Freeway Drive adjacent to SR 29.

8. The Central Planning Area: The City's downtown and the historic residential neighborhoods that surround the downtown in a traditional gridiron pattern are have been delineated as the Central Planning Area. These older neighborhoods are sometimes referred to collectively as "Old Town," an area generally extending from Imola Avenue on the south to Lincoln Avenue in the north. Old Town includes many 19th century residences, some of which are listed on the National Register of Historic Places. Several of the larger of these stately homes have been converted to Bed and Breakfast Inns.

The Central Planning Area also includes higher density units, particularly east of Franklin Street. The housing in this area is a mix of small apartment complexes and older homes, some of which have been converted to multi-family use. Duplexes and triplexes, many of which were converted from older single family homes, are scattered throughout the planning area but are especially abundant in the northern portion.

At the heart of the Central Planning area is Downtown. Downtown is the governmental and cultural center of the City, containing most County and City governmental offices as well as the traditional downtown retail center along First, Second and Third Streets. Downtown developed along the river west of Soscol beginning in 1850's and some remaining older buildings date from the 1880's. A Redevelopment project in the 1970's and 1980's led to the development of a new retail shopping "mall" between First and Pearl Streets.

Extending north, just east of Soscol Avenue, is an older industrial section of the City, still used for variety of light industrial uses (auto repair and related uses, machine shops, woodworking, etc.)

9. Soscol Planning Area: The Soscol Planning Area is a largely underdeveloped area located just east of the Napa River bounded by Imola on the south, Pearl Street on the north, with Soscol Avenue and Silverado Trail on the west. Closest to downtown, between Pearl and Third, this area is comprised of a mix of very old and newer homes, duplexes, mixed commercial uses and remnant industrial uses. Older industrial uses also extend south, between the River and Soscol Avenue. Most of this planning area is highly constrained by potential flooding. Because new development triggers the requirement to meet high cost flood mitigation standards, there has been very little new investment in the older stock of industrial and other uses located in this area. The flooding concern has also prevented development on some of the larger vacant parcels closest to the river.

In addition to older industrial uses, much of the City's auto related services are located along Soscol Avenue, as well as new and used car lots and auto repair services. The State owned Napa County Exposition fair grounds are also located in this planning area between Silverado Trail and Soscol Avenue, south of Third Street. A major new commercial shopping center is under development (1996) at the southeastern tip of this area at the north west corner of Soscol and Imola Avenues.

10. Terrace/Shurtleff Planning Area: The Terrace Shurtleff Planning Area is located in the southeastern portion of the city extending east of Soscol/Silverado Trail and south of Coombsville Road to Imola Avenue. This area is comprised primarily of a mix of single family homes built since the 1950's, recent small to medium size residential tract development and some multi-family housing located along major streets and scattered elsewhere in the Planning Area. Some medium size (5 to 10 acres) and smaller undeveloped parcels exist in the planning area, especially along Silverado Trail. The area is a patchwork of unincorporated islands within the RUL and the area remains partially developed and somewhat rural (older 1 acre or larger lot subdivisions) based on the pattern that developed under the County's jurisdiction.

11. River East Planning Area: Located at the southern tip of the City, primarily extending west of the Napa/Vallejo Highway to the Napa River, is the River East Planning Area. Napa Valley Community College, the City's largest park (Kennedy Park), and the Napa State Hospital are some of the public facilities found in this Planning Area. A "corporate business park" is located at the southern end of this Planning Area.

12. Stanly Ranch Planning Area: The Stanly Ranch Planning Area is located at the southwestern end of the city, primarily west of SR 29 and south of SR 12/121. This area was annexed to the city in two phases in the 1950's and 1960's, but has remained undeveloped and constitutes the largest single area of vacant land remaining within the RUL. The Planning Area includes the larger acreage of the Stanly Ranch property as well as two smaller parcels on the north side of SR 12/121 along Golden Gate Drive. One of the smaller parcels is owned by the City and designated as parkland and the other is privately owned.

The area lies outside LAFCO's adopted Sphere of Influence for the City of Napa and the current service boundaries of the Napa Sanitation District. The 1982 General Plan designated this property as "Study Area" (SA), with the understanding that further evaluation of land use alternatives, development constraints and service availability would be needed before establishing land use designations and specific policies for the area. In 1991, the City Council approved a cooperative planning effort between the property owners of the land the City to prepare a Specific Plan for Stanly Ranch.

At the time of this General Plan update, a concept for development of the Stanly Ranch included: a destination resort comprising 300 lodging units, with conference, meeting room, and related facilities; an 18 hole golf course and clubhouse with recreational amenities; up to 600 homes; a commercial wine center, small winery; and public amenities such as a wetland habitat, an interpretive wildlife center located by the Napa River, public access and boat dock, a connection to the Bay Area Trail, and deed-restricted open space. This potential intensity of development was considered in the modeling efforts for traffic and other impacts related to the land use scenario of the General Plan update.

A summary of existing use by planning area is shown in Table LU-2.

VISUAL QUALITY

The following discussion summarizes the existing visual conditions in the City of Napa area, focusing on the area within the RUL.

Visual resources are physical features or views that shape and define the character or aesthetic quality of an area. They can contribute to the quality of life in a community and can create a sense of place, that is, the impression

that a particular locale is unique. Visual resources include both the natural and the built environment. The natural forms and features of Napa include landforms, views, the rural/urban interface, the Napa River and tributary system, and native and non-native landscapes. The built environment includes physical landmarks, structures, and development types that form the community. The natural and built environments and the way they interface comprise the overall image and appearance of an area. The visual character of the RUL and the surrounding, area is of scenic value because it encompasses undisturbed natural settings, which include wetlands, prominent ridgelines, and rolling hills as well as rural and agricultural backdrops. Key views from the RUL and the features that make up these views or contribute to the area's scenic character are identified and described in this section.

Gateways

The term "gateways" is used to describe major visual entrances into and exits from an area. These visual entryways mark a perceptible transition from one visual environment to another. Visitors' and residents' impressions of the City are influenced by conditions at the points of entry. Four gateways into the City of Napa have been identified and are discussed in this section (Figure LU-7, Visual Gateway Locations). From the north, a sense of entering the community begins near the SR 29 juncture with Oak Knoll Avenue. Two other southern gateways to the City are at the SR 221 and SR 121 interchanges with Imola Avenue. A fourth entryway exists from the east along SR 121 where Monticello Road adjoins the Silverado Trail. From these points, the physical form and character of the community become perceptible to the motorist.

From the northern gateway along SR 29, the setting transitions from rows of vineyards to the east and west, with prominent views of the hillsides to the east, to sparse development spread out from the highway. At the intersection of SR 29 with Trancas Street, a full sense of having entered the community occurs, marked by active retail and commercial development activities.

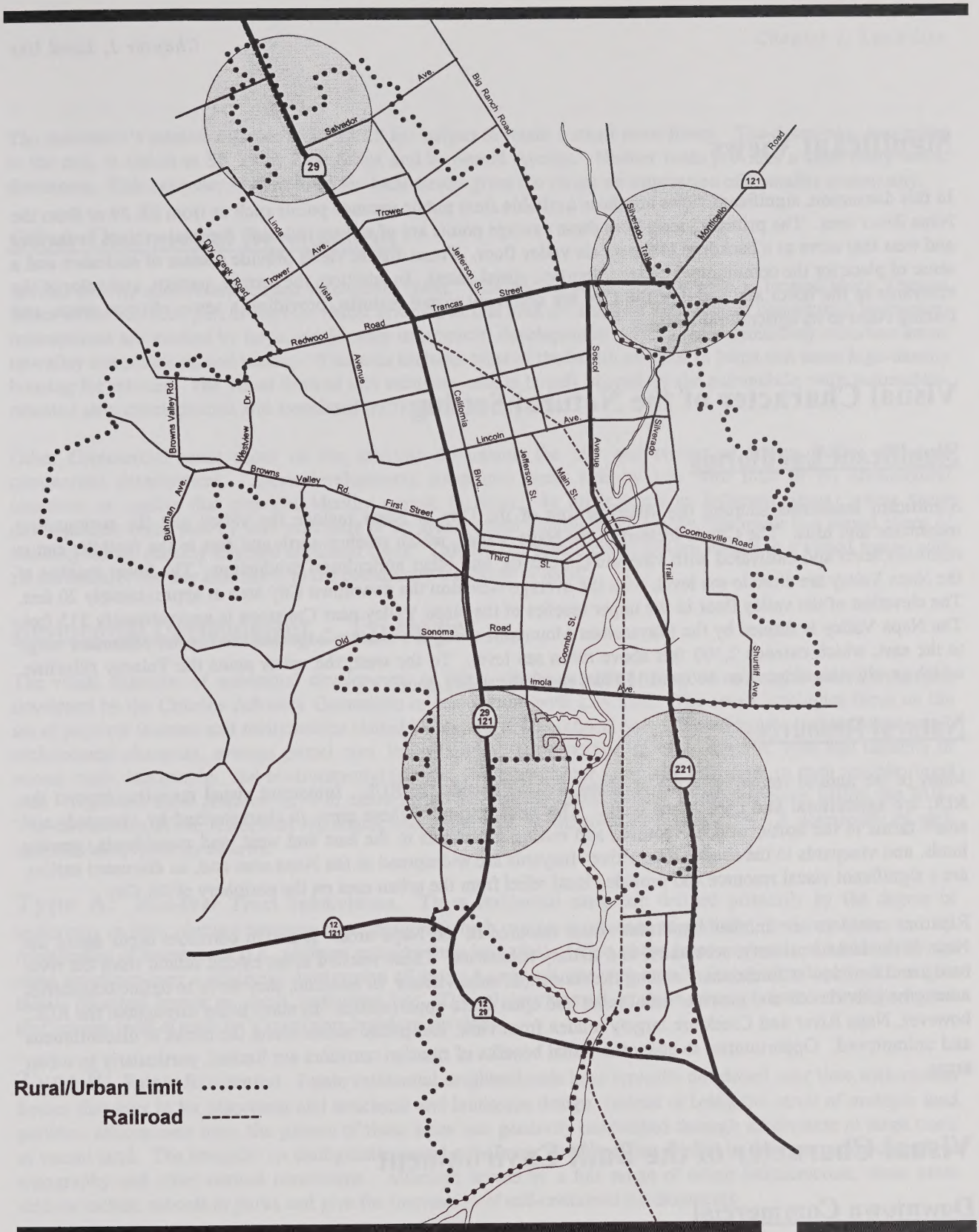
Similarly, as one approaches Napa from the east on SR 121 or the Silverado Trail, one is surrounded by vineyards and open fields until reaching the active commercial/retail centers along Trancas Street near Soscol Avenue. The transition into the community is less gradual here, with vineyards suddenly replaced by tree-lined streets leading into the busy activity center at Soscol Avenue.

From the southern gateway to the City along SR 121/29, a sense of entering the community occurs soon after SR 12 separates from SR 29. At this point, views of low-lying, rolling hills and grazing cattle become intermingled with single family housing on the hillside to the west and multifamily housing to the east. Like the northern gateway, the transition in visual landscapes toward this gateway is gradual. The scene changes from low-lying hills to gas stations and self-storage lots at Imola Avenue.

Along the southern SR 221 gateway, the transition into the City is also gradual. The foreground views of cattle grazing in open fields and distant views of the foothills to the east and the Napa River corridor to the west slowly transition into more focused views of the landscaped properties of the Napa Municipal Golf Course, Napa Valley College, and Napa State Hospital. At Imola Avenue, the transition into the community is complete, with views of the new shopping center at the corner of Imola and Soscol and automobile dealerships and related commercial uses lining Soscol Avenue north to the Downtown.

Scenic Corridors

The City has designated SR 29 is as a Scenic Highway. Other roadways with important scenic qualities within the RUL include Dry Creek Road, north of Redwood Road; Redwood Road, west of the Dry Creek Bridge; Big Ranch Road, north of Trancas Street; Coombsville Road, east of Silverado Junior High School; Thompson Avenue; El Centro from Jefferson Street to Big Ranch Road; Old Sonoma Road, west of the city limits; and Patrick Road. These roadways serve as key vantage points to the open space, rolling hills, ridgelines, and wetlands that define Napa's visual character.



Rural/Urban Limit ·····

Railroad ------

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Figure - LU 7

Visual Gateways

North

725' 1/2 Mile 1 Mile 3 Miles

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Significant Views

In this discussion, significant views are those available from public vantage points such as from SR 29 or from the Napa River area. The primary views from these vantage points are of rolling hills and mountain ridges to the east and west that serve as a backdrop to the scenic valley floor. These distant views provide a sense of enclosure and a sense of place for the community and are important visual assets. In addition, the texture, pattern, and color of the vineyards to the north and south of the City are dominant visual features, providing a sense of open space, and linking Napa to its agricultural heritage.

Visual Character of the Natural Setting

Significant Landforms

Significant landforms shaping the visual setting of the City of Napa include the valley and the surrounding mountains and hills. The City is located in the Napa Valley, which reaches north and east to the foothills and is relatively level and cultivated with vineyards, orchards, and other agricultural production. The lower reaches of the Napa Valley are close to sea level, with the average elevation the downtown City area at approximately 20 feet. The elevation of the valley floor in the upper reaches of the Napa Valley near Calistoga is approximately 315 feet. The Napa Valley is framed by the Mayacamas Mountains along the western edge and the Howell Mountain range to the east, which extends 2,300 feet above mean sea level. To the west, the valley abuts the Tulocay ridgeline, which gently rises to between 300 and 350 feet above the valley floor.

Natural Resources

Many of the natural resources in the planning area lie outside the RUL. Important visual resources beyond the RUL are agricultural and open space lands. The rural setting of these areas is characterized by vineyards and small farms to the north, wooded foothills and rolling grasslands to the east and west, and marshlands, grazing lands, and vineyards to the south. Productive vineyards are widespread in the Napa area and, as discussed earlier, are a significant visual resource and provide visual relief from the urban uses on the periphery of the City.

Riparian corridors are another important visual resource in the Napa area. Riparian corridors occur along the Napa River and its primary, secondary, and tertiary tributaries. These wooded areas extend inland from the river banks and function as linear oases among the residential subdivisions In addition, they serve to define boundaries among neighborhoods and provide visual relief and open space opportunities. In many areas throughout the RUL, however, Napa River and Creek are largely hidden from view, and public access along the banks is discontinuous and unimproved. Opportunities to enjoy the visual benefits of riparian corridors are limited, particularly in urban areas.

Visual Character of the Built Environment

Downtown Commercial

The unique visual character of downtown Napa, embodied in the historic architectural elements of Main Street and the pastoral qualities of the riverfront, creates an atmosphere that is highly memorable. Architecturally, the historic buildings reinforce the small town setting, contributing to modern Napa's charm. In some areas of the downtown, however, sidewalks are in varying states of repair, lighting quality is poor, and lighting standards are a mixture of styles.

The downtown's relative distance from SR 29 has helped to retain a small town flavor. The downtown, two miles to the east, is linked to SR 29 by First Street and by Soscol Avenue. Neither route provides a clear entry to the downtown. This entryway to downtown via local streets gives the visitor an impression of a smaller community.

Other Commercial Development

Several activity centers are located throughout Napa. The northernmost activity node is located along Trancas Street in the northern part of the city. Most arterials in this area are lined by high-quality commercial businesses. Intersections are marked by large, single-story commercial developments serving the surrounding suburban areas, up-valley communities, and tourists. This area includes most of the health services in Napa and some high-density housing for retirees. The visual form of this suburban core is largely shaped by the automobile, with automobile-oriented strip developments and associated traffic defining this area.

Other Commercial areas occur on the arterials throughout the city and consist of lower quality strip-type commercial development. These developments sometimes occur side by side with little or no architectural character or quality that provides identity unique to Napa. In areas (such as Jefferson Street) where these developments occur side by side with little or no architectural continuity or quality, the result is a visual chaos of building forms, parking lots and unrelated signs. This type of development pattern results in a visual image with no particularly identity that ties it to the community's concept of itself.

Residential Development - Typologies

The visual character of residential development in Napa can be described using seven neighborhood typologies developed by the Citizens Advisory Committee in conjunction with City staff. The seven typologies focus on the set of physical features and relationships shared by a given neighborhood unit. These features include streetscape, architectural character, average parcel size, lot to building relationships, platting patterns, type and capacity of access roads, topography, and environmental factors. Not every factor is equally important in each neighborhood area. Together, these features serve to characterize the visually homogeneous residential units within the RUL. The distribution of the residential typologies within the RUL is presented in Figure LU-8. A description of each neighborhood typology follows.

Type A: Post-War Tract Subdivisions. These residential areas are defined primarily by the degree of uniformity in their platting patterns, street designs (which can be curvilinear or gridiron), building types, and the relationship of home to lot (i.e., uniform setbacks from lot to lot). Often, these areas were platted and built by the same developer over a relatively short period of time. As a result, the area may be largely developed with single-family detached homes on small, individual lots. Typical development in these areas is characterized by homes that occupy most of each lot's regulatory building envelope.

Type B: Estate Residential. Estate residential neighborhoods have typically developed over time with custom homes that vary in lot placement and structural and landscape design. Instead of being the result of multiple land partition actions over time, the pattern of these areas was generally established through subdivision of large tracts of vacant land. The irregular lot configurations and curvilinear street systems typical in these areas are a result of topography and other natural constraints. Although served by a full range of urban infrastructure, these areas seldom include schools or parks and give the impression of self-contained developments.

Type C: Period Tract Subdivisions. These neighborhoods are often named for an original recorded subdivision that was platted and partially developed prior to enactment of zoning regulations. They exhibit homogenous platting patterns of lots of up to 0.5 acre in size along gridiron or curvilinear streets. These areas are typified by limited diversity of building types and maintenance levels. Since the homes were built at different times, they vary in size, design, and lot relationship. A limited mix of dwelling unit types may also be evident in

such areas (e.g., duplexes or granny units along with single family detached homes). The presence or absence of streetscaping and other public improvements are therefore primary determinants of the character of the area.

Type D: Ranchettes. Ranchette areas were divided over time through multiple land partition actions. They include a large number of irregularly shaped and/or sized lots. Lot sizes typically range from 0.5 to up to 5 acres in size. Some Type D areas with a long history of multiple partitions may have lots as small as 5,000 square feet, but these lots are the exception rather than the rule. Partially developed. Prior to annexation, these areas exhibit diversity in physical neighborhood character factors (e.g., homes of varying architectural style and period). Developed almost exclusively with one or more single family homes on individual lots, they are defined primarily through the placement of single dwelling units on acreage tracts, rather than by the street grid. These areas often lack public improvement such as streetscape and sidewalks that would otherwise serve as unifying elements.

Type E: Deep Lot Subdivision. Often platted and developed prior to annexation, these areas are characterized by large, regularly shaped lots that are most often developed with post-1950 homes. Lot width to depth ratios typically exceed 1:3 in these areas. The homes are located either clearly to the front or the rear of a large, deep lot. Sometimes more than one single family home, duplexes, or triplexes have been built on individual lots. The development pattern in these areas generally includes regular individual lot setbacks and house sizes. Street patterns are typically gridiron, but are often narrower than the typical urban cross section. Some may have been developed as "rural subdivisions" prior to annexation. These include urban-style improvements such as curb and gutter streets or sidewalks. Other public improvements, such as schools, parks, and public facilities (e.g., sewer and water) are often post-development amenities built since annexation.

Type F: Traditional Neighborhoods. These areas are characterized by small lots laid out between a predominantly gridiron street pattern. Radial streets and alleys may also be included in the street grid. These areas were typically platted before the 1930s. The identity of traditional neighborhoods is often defined by abundant "period" architecture, which may represent a majority of the area's total dwelling units. Large historic homes that have been converted to multi-family or commercial uses are common. Characterized by a mix of housing types, these areas also often have neighborhood commercial and office uses on their fringe. Small scale multi-family housing (e.g., duplexes and structures up to 10 units) may be located throughout the area as well. Relationships to schools, parks, and defining natural features frequently act as a focus for neighborhood identity.

Type G: Attached Unit Residential. These areas are sometimes referred to as multi-family neighborhoods. They are dominated by residential uses other than single family detached homes, which may, however, occur as isolated uses. Area identifiers are primarily attached unit residential structures that can vary in scale from concentrations of duplexes and triplexes through areas dominated by apartment and condo/townhome developments. Because of the scale and amenities of many attached unit projects, these areas often include extensive public and private improvements. Street patterns can be either gridiron or curvilinear and usually include streetscaping and sidewalks. Platting patterns and lot sizes are often irregular, reflecting multiple land partition and assembly actions over time. Unlike most other residential areas, commercial and public uses may be integrated with residential uses, rather than occurring solely on the fringe.

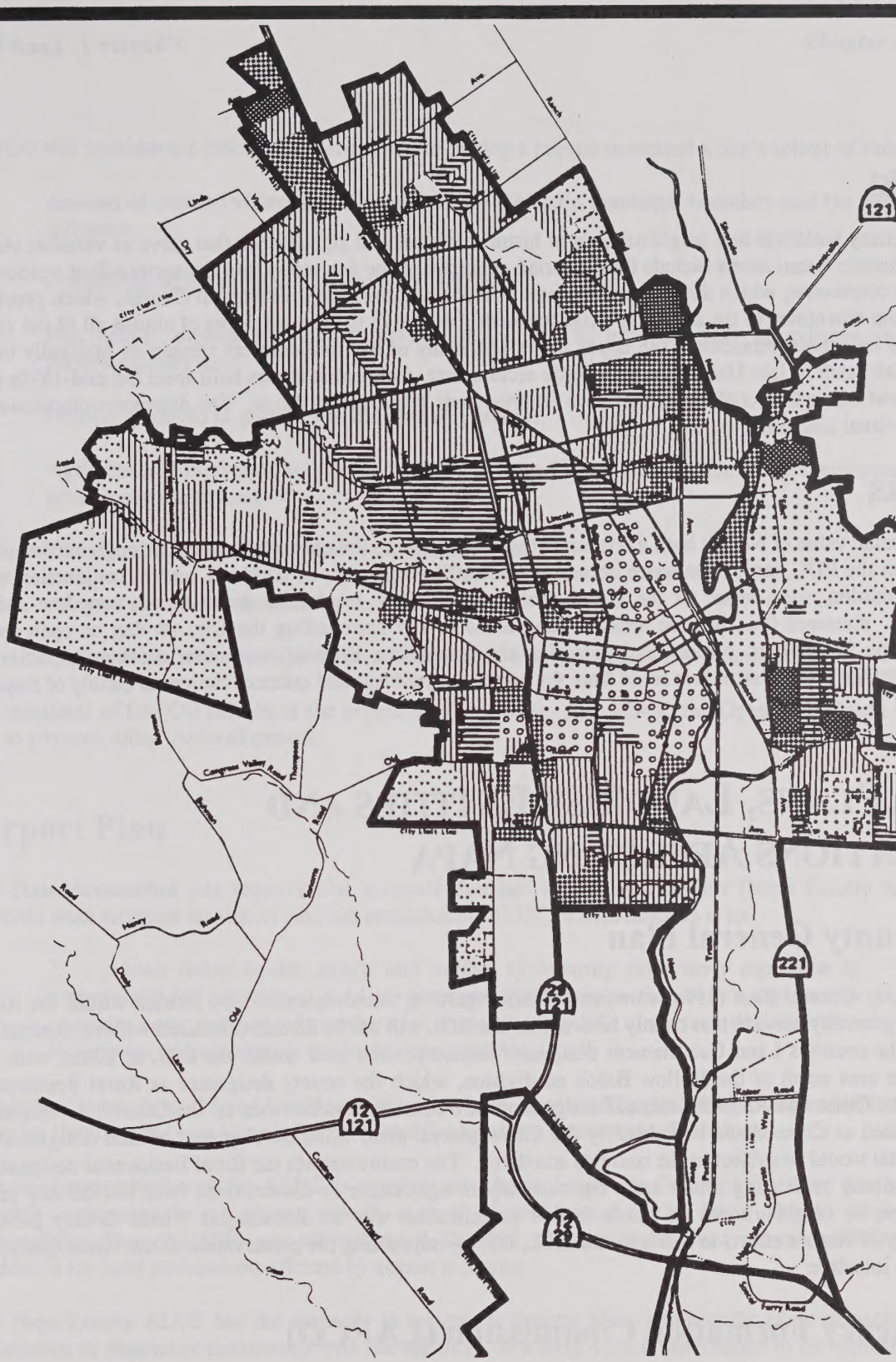

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Figure - LU 8

Residential Typologies

North

Typologies:

A
B
C
D
E
F
G

725' 1/2 Mile 1 Mile 3 Miles

0

Source: City of Napa Planning Department

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Landmarks

The City has many buildings and neighborhoods of historic interest and significance that serve as valuable visual landmarks. Historic visual assets include the Victorian character of the downtown and the surrounding residential area; the 1878 courthouse, which dominates the center of town; and the First Presbyterian Church, which provides a transition from downtown to the adjoining neighborhoods. Although the ground floors of almost all of the retail store buildings have been remodeled, the upper floors and many of the roof cornices remain as originally built. Napa is especially rich in late 19th-century domestic architecture. Numerous homes built from the mid-1870s still exist, and several whole blocks of residential have retained their 19th-century flavor. The downtown clocktower is a more recent visual landmark.

Open Space

Much of the scenic value of Napa's built environment is attributable to the open space found throughout the urban setting. Within the RUL, most open space occurs as underutilized parcels, as parkland, and in conjunction with schools. In addition, open space in the visual sense occurs where residential densities are very low and/or development is clustered (i.e., hillside areas). Land areas in and surrounding the City serving as open space include the Napa fairgrounds, cemeteries, reservoirs, the Napa State Hospital, and other community facilities. Landscaped grounds provide attractive relief from the urban environment and enhance the visual quality of Napa.

OTHER PLANS, LAND USE ENTITIES AND REGULATIONS AFFECTING NAPA

Napa County General Plan

The Napa County General Plan (1994) contains policies regarding unincorporated land located within the RUL. These policies generally provide that county land within the RUL will not be further urbanized without annexation to the City. The county's Land Use Element designates unincorporated land within the RUL as Cities, with the exception of an area north of the Willow Brook subdivision, which the county designates as Rural Residential. Though both the Cities and Rural Residential designations are considered urban uses by the County, development of land designated as Cities would be guided by the City's general plan, while development of land designated as Rural Residential would be subject to the county's standards. The county applies the Rural Residential designation to land in proximity to existing urban areas but currently in agriculture or development with low density year-round residences in neighborhoods in which further parcelization will be discouraged. These County policies support the City of Napa's efforts to maintain the RUL, thereby supporting the preservation of the visual quality of the rural/urban interface.

Local Agency Formation Commission (LAFCO)

The Napa County LAFCO has adopted general policy determinations as well as sphere of influence policies for each city and special district (pursuant to Section 56300 of the California Government Code) which include specific policies pertaining to protection of agricultural and open space lands. The intent of the city sphere of influence policies is to promote orderly expansion of cities in order to provide effective, efficient and economic provision of essential public services, including public sewer and water, fire and police protection, and circulation patterns; and, not to permit the premature conversion of prime agricultural land and open space to urban uses.

LAFCO will consider the following criteria when reviewing a request to expand a city's sphere of influence:

1. Amount of existing vacant lands located within the city's municipal boundary and the current sphere of influence.

2. Constraints which prohibit buildout of vacant land.

3. Past action, present and future policies of the city to promote infill of existing vacant land or underdeveloped land.

4. Projects approved or currently in the planning process.

5. Agricultural preservation policies of the city and Napa County which guide future development away from prime agricultural land.

6. Plans for the delivery of services to the affected areas.

7. Adopted capital improvement plans of the city.

8. Compatibility with the Napa County General Plan and the affected city general plan.

The emphasis of LAFCO policies is the protection of important agricultural and Open Space lands in the County and to promote urban centered growth.

Airport Plan

The State Aeronautics Act requires that a county that has a public-use airport (Napa County has three such airports) must establish an airport land use commission (ALUC) whose function is to:

> *". . . protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."*

The Napa County Airport Land Use Commission is a body, appointed by the Board of Supervisors. It's staffing is provided through the Napa County Resource and Conservation Department (Planning).

The chief responsibility of the ALUC is to adopt an Airport Land Use Compatibility Plan that addresses each airport's anticipated future airport growth over a 20-year period. The Napa County Airport Land Use Compatibility Plan (ALUCP) was adopted April 22, 1991, and establishes land use compatibility policies and guidelines for local jurisdictions affected by airport activities.

The Napa County ALUC has the authority to review the general plans and specific plans of each affected local jurisdiction to determine consistency with the ALUCP. If a local plan is determined to be inconsistent with the ALUCP, the affected local agency must either amend its general plan (and any applicable specific plan and zoning ordinance) or take specific steps to override the ALUC. Until either of these steps is resolved, all actions, regulations or permits within an affected area must be referred to the ALUC for a consistency determination. Once consistency with the ALUCP is achieved, only actions such as general plan or specific plan amendments must referred to the ALUC for a consistency determination.

Congestion Management Program

Preface Note to This Section:

At the time when this General Plan update was under preparation a Congestion Management Plan was a legislative requirement in all metropolitan regions of California. In the City of Napa, CMP facilities included State Routes 12, 29, 121, and 221 and Trancas Street. The state mandate for a CMA (Congestion Management Agency) was eliminated under state legislation signed by the Governor in 1997 (AB 2419). On June 17, 1998, the Napa County Congestion Management Agency transitioned into a Joint Powers Agency entitled the Napa County Transportation Planning Agency ("NCTPA"). The NCTPA is charged with the development of a Strategic Transportation Plan and Program for highways, streets and roads, transit, paratransit, and bike paths within the Napa region. There is no longer a Napa County Congestion Management Plan or Program. The following text references to the CMP are maintained in this Background Report to provide information on the context of transportation planning during the time the General Plan update was prepared. The cooperative transportation modeling that was accomplished during this time remains a valuable transportation planning resource for General Plan purposes.

Pursuant to Proposition 111, passed by the voters in June 1990, each county in the State is required to establish a Congestion Management Agency (CMA) and prepare a Congestion Management Program (CMP). The main goals of the CMP are to establish a political process through which countywide roadway congestion can be controlled or relieved, and to develop a comprehensive strategy to respond to countywide transportation needs. State law requires that each CMA prepare, implement and biennially update the CMP. The CMP consist of the following basic elements:

1. A transportation network that includes State highways and principal arterials.

2. Traffic level of service (LOS) standards for the CMP network.

3. Performance measures to evaluate current and future multimodal system performance for the movement of people and goods.

4. A travel demand program to promote travel by alternative transportation modes (non-single-occupancy vehicle).

5. A land use impact analysis program to evaluate land use development impacts on the CMP network.

6. A multi-year capital improvement program (CIP) to find transportation projects that support CMP goals. The CMP must be updated biennially to reflect changing transportation needs and conditions within the county and the CMP CIP must be submitted to the MTC every two years to be incorporated into the Bay Area Regional Transportation Improvement Program. A Deficiency Plan is required to be developed where intersections fall below the LOS standards.

Napa County and its cities at the time (Calistoga, St. Helena, Yountville, and the City of Napa) established the Napa County Congestion Management Agency (CMA) in June 1991; subsequent to incorporation, American Canyon became the fifth city to join. the CMA is a joint powers agency with a board consisting of members of each jurisdiction's elected governing body. Although the CMA is an independent agency, it is placed in the County's administrative structure and is staffed by County personnel. Of the CMA's total proposed 1996/97 budget of $616,000, the City would pay approximately $19,700. The statutory mandated mission of the CMA is to maintain the mobility of the countywide transportation system, improve air quality and link transportation and local land use decisions through the preparation and adoption of a Congestion Management Program (CMP).

Thus, the CMA serves as a facilitator and coordinator for transportation planning and funding throughout the county.

In 1992, the City of Napa and the Napa County Department of Public Works jointly funded the development of the travel-forecasting model to be used for divers purposes in the County. The City desired and has since used the model for its General Plan Update; the County Department of Public Works subsequently transferred the model to the Napa County Congestion Management Agency. The CMA portion of the model has subsequently been updated to reflect the 1994 ABAG land use control totals, whereas the General Plan work has continued to use the 1992 model and data as a basis. Other than the basis of land use, the models are intended to be as compatible as possible given the different goals of the two respective users. Land use data in the Napa General Plan data portion of the model represents a combination of 1992 City Land use data plus (for 2020) the increment projected for build-out of the plan. It also includes estimates provided by the County Department of Conservation, Development and Planning for those portions of the county outside the City.

The Napa County CMP Model is a land use based model that directly forecasts PM Peak Hour Trips. The model covers all of Napa County with a total of 203 zones. The Land Use Module is comprised of housing unit data and a combination of employment square footage and acreage for non-residential uses. The data has been compiled from a parcel-by-parcel inventory of the County. The City base data used for the model was the same as was used for the projections in this General Plan.

Air Quality Attainment Plan

To achieve and maintain compliance with federal and State air pollution standards, the Bay Area Air Quality Management District (BAAQMD) and ABAG adopted an Air Quality Management Plan in 1982 to identify pollution sources, quantify present emissions, estimate future emissions and study pollution control strategies for attainment and maintenance of federal and State standards. State and federal standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter and lead. State standards are more stringent than federal standards for ozone and particulate matter.

The BAAQMD is the primary agency responsible for ensuring that the federal and State ambient air quality standards are attained and maintained in the Bay Area. The BAAQMD's responsibilities include:

- Preparation of plans for attaining and maintaining ambient air quality standards in the region.
- Adoption and enforcement of rules and regulations concerning air pollution sources.
- Issuing permits for stationary sources of air pollution and responding to citizen complaints.
- Monitoring ambient air quality and meteorological conditions.
- Awarding grants to reduce motor vehicle emissions.
- Conducting public education.

Local jurisdictions, through policy and project conditions of approval, are responsible for considering the effect of local activities and decisions on the attainment status for the Bay Area Region. In April 1996, the BAAQMD released the BAAQMD CEQA Guidelines in an effort to provide additional information to help jurisdictions evaluate the air quality impacts of projects and provide suggested mitigation that will help maintain regional air quality.

POPULATION AND EMPLOYMENT

The City of Napa in the County and Region

The San Francisco Bay region has continuously attracted new residents since the Gold Rush. Most people have been drawn here by the lure of economic opportunity and the area's remarkable physical amenities. Today, despite one of the highest costs of living in the United States, residents continue to enjoy an enviable quality of life. And Napa, located in the north Bay Area, offers one of the most desirable lifestyles in this most desirable region (Figure LU-1 Regional Area).

Ironically, much of Napa's current appeal stems from the fact that it remains largely untouched by the rapid population and employment growth that has characterized most of the Bay Area. Instead of corporate parks surrounded by tract suburbs and shopping malls, Napa County continues to be known as an agricultural area of quaint small towns surrounded by abundant open space. Both the area's isolation in the region's northern fringe, and local policy decisions made over the past two decades, have enabled the county and its cities to preserve the area's predominately rural lifestyle.

Napa's development nevertheless has been affected by regional population and employment trends. The area's actual growth rate, as well as local land use policies responding to growth, can be traced directly to the impacts of expanding regional population and employment. During the 1970's and 1980's the city of Napa reacted to regional growth pressures with land use policies aimed at controlling what was perceived as a primary cause of unwanted change, population increase. The city's policies were effective in dramatically slowing the local population growth rate, as well as the city's rate of housing production and job creation.

Understanding the interrelationships between local actions and regional trends is helpful when assessing the effectiveness of past policy. In some cases local policy has been reinforced by regional trends. At other times, communities have found themselves going against a tide so strong that local policy has been weakened or worse, countered entirely. For example, sometimes the secondary effects of policies limiting land supply for residential uses have been a parallel constraint on job creation and subsequent demographic shifts. These effects can be either exaggerated or ameliorated by regional factors such as the strength of the region's economy and housing markets, commuting opportunities offered by regional transit systems, and the amount and kinds of social services available in or near the community.

The relationship between a community and its region can seldom be completely controlled, and the price Napa has paid for its policy decisions has been a slower rate of economic expansion, increasing numbers of commuters, and a shift over the past two decades to a relatively older, more homogenous community. Taking such factors into account will allow decision makers to refine future policy actions to achieve desired objectives, while reducing or eliminating negative secondary effects.

Regional Trends

In the early 1950's, the Bay Area's population and employment was largely concentrated in and around the cities of San Francisco and Oakland. Aided by state and federal highway construction programs, the southern portion of the region experienced dramatic population and employment increases during the 1960's, while the city of San Francisco actually lost population. Influenced by the access afforded by the freeway system (I-80, I-680 and Highway 101 in particular), population and employment growth began shifting north and east towards Napa, Sonoma, Solano and Contra Costa Counties in the 1970's. Recent development trends suggest that the region's future growth will be slower than that experienced in the past, but that these areas will continue to absorb a large share of future growth.

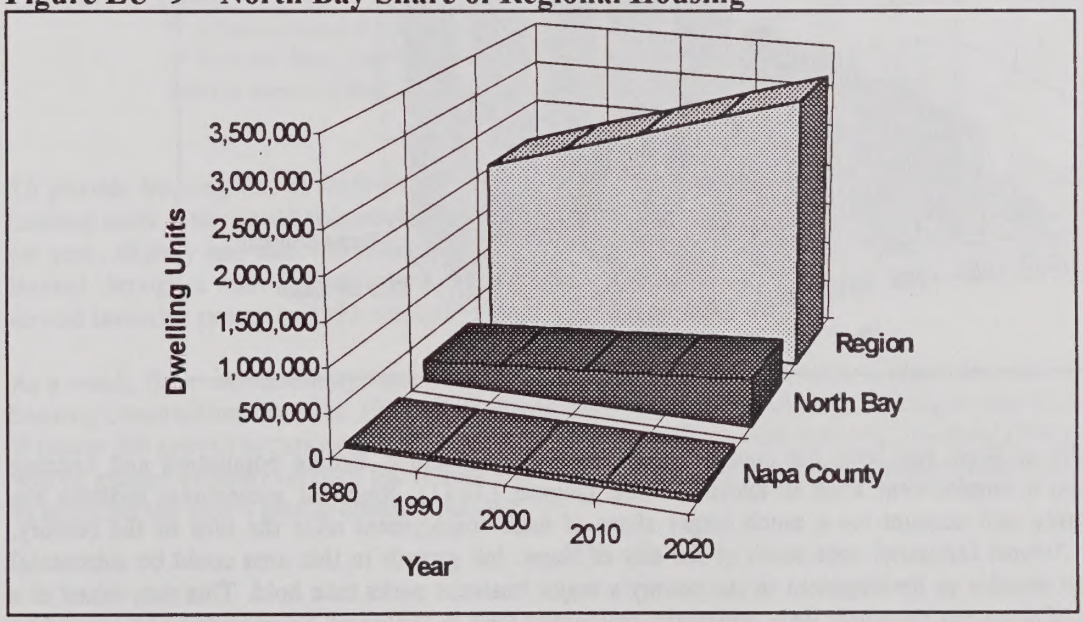
Not surprisingly, regional housing patterns and trends have mirrored those of population, concentrated in and around San Francisco and Oakland in the early 1950's, later shifting to outlying areas with the rapid growth of suburban communities during the 1960's. The trend toward suburban housing continued through the 1970's in response to both market demand generated by employment growth and the growth oriented land use policies of many Bay Area communities. Between 1970 and 1990, the Bay Area's population grew at an average rate of 1.3 percent per year to a total of 6 million. This growth generated a demand for over 715,000 housing units. Abundant land for development insured a competitive supply of affordable housing during much of this period, although inflation and consumer demand pushed housing prices higher during the 1980's.

Napa county has absorbed a decreasing share of both regional and North Bay growth since 1980. The county's average annual 1970 through 1980 population growth rate of 2.3 percent per year slowed to 1.1 percent between 1980 and 1990, ranking second only to Marin county as the lowest in the Bay Area. Meanwhile, Napa's neighbors, Solano and Sonoma counties, ranked among the region's fastest growing. As a result, Napa's share of North Bay population dropped from 16 percent in 1980 to 13 percent in 1990, and is projected to continue to decline to 12 percent by 2010.

Although the largest number of new homes were built in the South Bay during the 1970's and 1980's, the *rates* of housing production in the North Bay counties of Napa, Solano, and Sonoma during that period were among the highest in the region. As a result, the North Bay's housing stock, which accounted for 9.8 percent of the region's total in 1970 grew to 11.7 percent of the Bay Area's two million housing units by 1980, and 13.5 percent of the 2.4 million total units by 1990. This trend is expected to continue in neighboring Sonoma and Solano counties, while Napa county's housing growth rate is projected to decline to 0.6 percent per year between 1995 and 2020 (Figure LU 9).

The increase in North Bay housing was followed by job growth, as businesses sought suburban locations beyond the region's congested urban centers. These regional shifts in population and employment, particularly to nearby Sonoma and Solano counties, have stimulated Napa county's housing market beyond what would be expected based on purely local conditions. This illustrates how, in one way or another, Napa's future continues to be influenced by the dynamics of regional growth and development.

Figure LU- 9 North Bay Share of Regional Housing



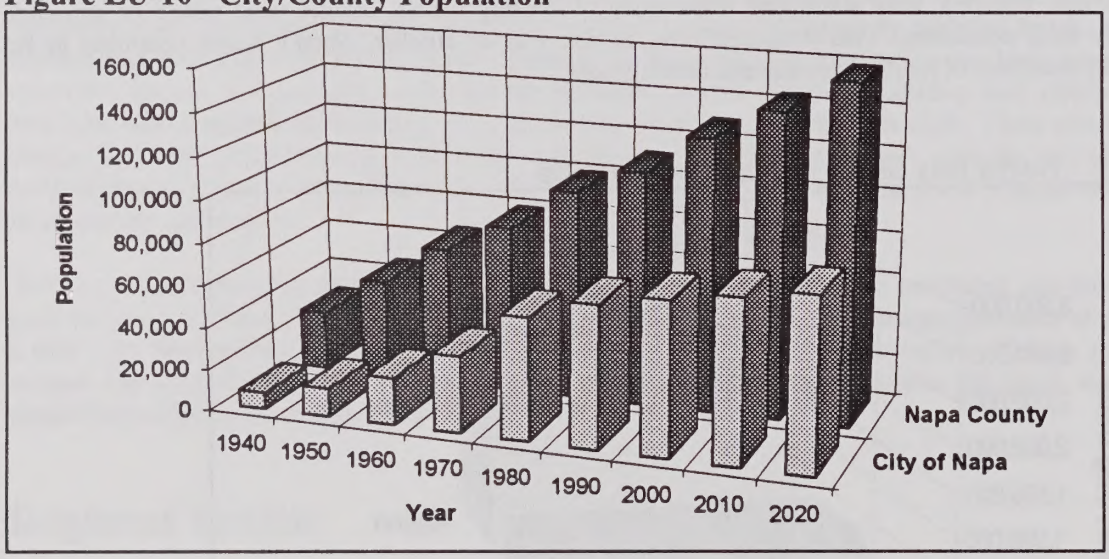
City /County Trends

The City and County have formally cooperated since the early 1980's to ensure that urban development occurs in designated urban service areas. In order to carry out this joint policy, the County's General Plan currently limits development in its portion of the RUL and supports annexation of lands within the city's growth boundary. Even before the City and County formalized their policy positions regarding growth management, the city's RUL was acting to limit the amount of "urban sprawl" the city experienced.

As the largest urban area in the county, the City's role in determining the pattern and extent of future growth has become increasingly evident. Figure LU 10 shows the city's population growth in relation to total county population since 1940 (total RUL population after 1980), and projects this relationship between 2000 and 2020. In 1970, the city accounted for 46 percent of the county's total population. By 1980, the city of Napa accounted for 51 percent of total county population and housing stock. With the addition of unincorporated lands within the city's RUL, Napa's urban residents accounted for 58 percent of total county population in 1980 (Table LU 3). The city's share of total county population is expected to hold steady or decline slightly in coming years as the city of American Canyon claims an increasing share of county population.

During the decade between 1970 and 1980 74 percent of the county's total population growth, and nearly 57 percent of the total housing units added, were located in the city of Napa. This trend continued between 1980 and 1990 when the city accounted for 77 percent of total county population increase and over 87 percent of new housing, reflecting the nationwide 1980's trend toward smaller households. Today, the county's urban areas house 79 percent of its residents, most of whom reside within the city of Napa's RUL (Figure LU 10). By 2020 it is anticipated that residents of the county's four cities will account for over 80 percent of the total population, reflecting a continuing concentration of population in the urbanized areas.

Figure LU-10 City/County Population



Historically, the city of Napa has been the county's main employment center. Unlike population and housing however, the county's employment base is decentralizing (Figure LU-11). Regional projections indicate the unincorporated county will account for a much larger share of total employment after the turn of the century, particularly in the Airport Industrial area south of the city of Napa. Job growth in this area could be substantial during the next two decades as development in the county's major business parks take hold. This may occur at a time when the city of Napa has relatively little remaining residential land to "balance" housing demand created by an increasing number of city and county workers.

When preparing regional "fair share" housing estimates (i.e. the estimate of housing needed to maintain the existing balance between employment and residential uses in a community), the Association of Bay Area Governments (ABAG) assesses each jurisdiction independently. ABAG does not assume one jurisdiction will be "responsible" for housing another's workers unless there is a specific agreement between them to do so. It is rather assumed that sufficient housing opportunities will be provided countywide to meet the net housing demand generated by city and county job growth.

Table LU-3
Local and Regional Trends

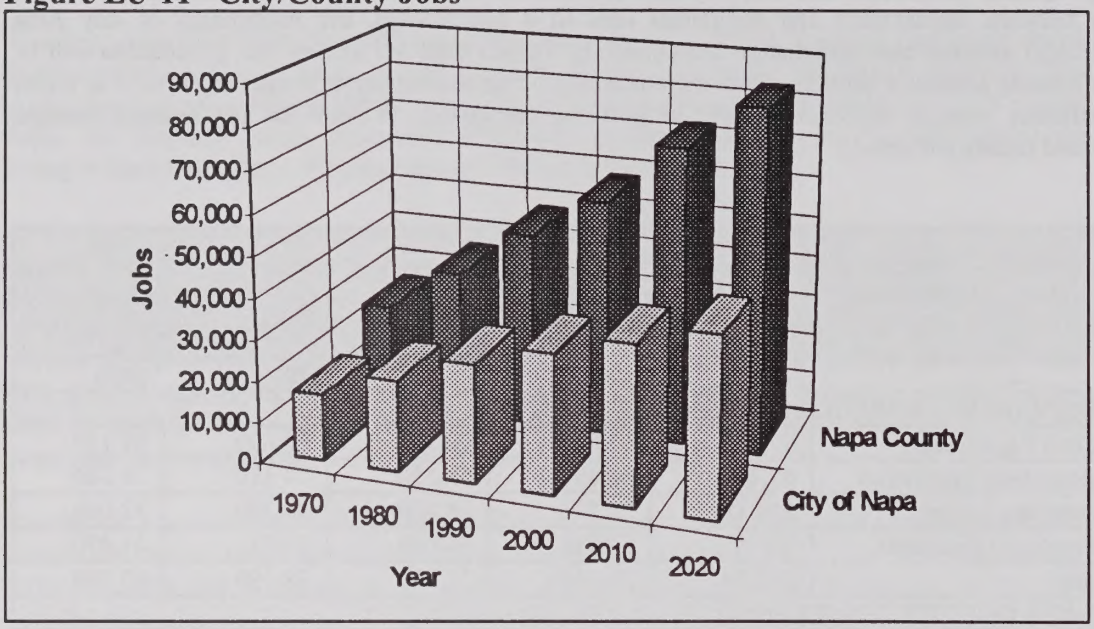
	1980	1990	2000	2010	2020
CITY OF NAPA WITH RURAL URBAN LIMIT AREA**					
Total Population	57,829	67,026	72,250	76,670	81,140
Household Population	57,159	64,497	69,250	74,170	78,640
Dwelling Units*	23,310	26,305	28,400	30,300	32,000
Employed Residents	26,683	31,616	34,080	37,810	41,470
Jobs	22,234	28,640	33,620	38,190	42,720
NAPA COUNTY (Whole County)					
Total County Pop.	99,199	110,765	129,200	143,300	158,300
Household Population	93,361	105,085	122,200	136,500	150,790
Dwelling Units*	38,089	42,965	49,860	56,590	62,470
Employed Residents	43,197	52,683	59,400	68,400	78,800
Jobs	35,827	47,590	57,610	72,260	83,200
SAN FRANCISCO BAY REGION (9 County Total)					
Total Population	5,179,789	6,021,097	6,875,400	7,533,200	8,381,000
Household Population	5,058,620	5,869,683	6,722,750	7,365,750	8,194,700
Dwelling Units*	2,049,373	2,336,092	2,612,760	2,903,710	3,185,400
Employed Residents	2,552,894	3,151,943	3,429,500	3,889,100	4,291,200
Jobs	2,537,776	3,110,430	3,358,990	3,971,380	4,382,000

* *Assumes four percent vacancy rate.*
** *Includes Napa State Hospital group quarters population and related employment in RUL.*
Source: Assoc. of Bay Area Governments Projections '94; City of Napa Planning Dept.(2020 figures)

To provide housing for its 60,000 households projected for 2020, Napa County will need to add nearly 20,000 housing units. This would require the county (cities included) increase the total amount of housing by one percent per year, slightly less than the annual housing production rate sustained between 1980 and 1990. Napa County is limited through a voter initiative to a one percent per year growth rate in its unincorporated areas until 2000. A second initiative passed in 1992 similarly limits growth through 2020.

As a result, the complementary land use policy positions of the county and its cities that have funneled most new housing construction since the 1970's into the county's cites will become increasingly vital to the area's economy. If county job growth occurs as projected and the county cannot provide sufficient residential lands, one likely result will be greater pressure on both the county and cities of Napa and American Canyon to provide additional housing to maintain the area's jobs to housing balance.

Figure LU-11 City/County Jobs



Napa's Changing Population Profile

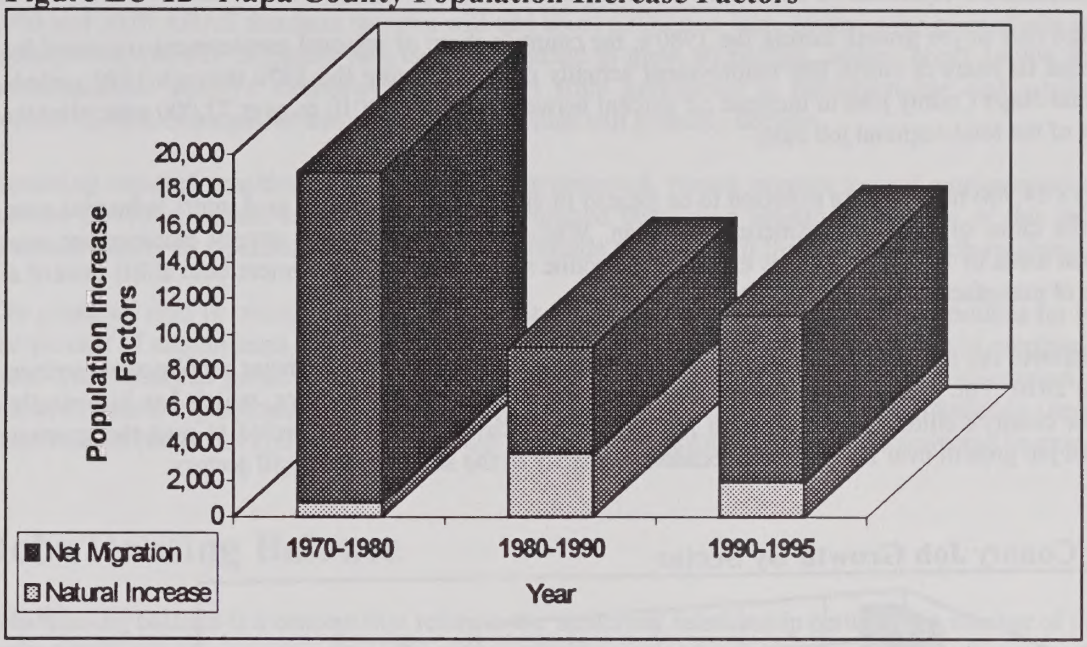
Between World War II and 1980 most of Napa's population growth resulted from in-migration from other areas. The Department of Finance estimated that net migration during the 1970's was responsible for nearly 95 percent of the growth experienced in Napa county. As in-migration slowed during the 1980's, natural increase (births minus deaths) accounted for an increasing proportion of population growth, averaging 32 percent per year through 1990. This trend is significant since this type of increase is less easily affected by local land use policy (Figure LU-12).

Population Age

An important effect of this change is its impact on local population profiles. Partially as a result of local growth control policies that affected both the affordability and supply of housing, plus national demographic factors, average age in both the city and county have increased. Napa county's 1970 population with a median (50 percent above and 50 percent below) age of 32.2, was nearly four years older than the state median of 28.1. At the same time the median age for the city of Napa was 29.0, closer to the state's. Twenty years later, the city's median of 34.7 was closer to the county's median of 36 years, which were both were substantially older than the state's median of 31.5. The greater age shift in the city is an indicator of the city's trend toward an older, more affluent community, typified by established families with school age children and "empty nesters."

The age composition of a community and its changes over time are important indicators of the types of facilities (e.g. schools, senior care facilities, public transportation) and housing that may be needed in the future. Like many other parts of the region and nation, Napa has been experiencing the effect of the "baby boom echo." Birth rates increased during the late 1970's and into the 1980's as the members of the populous "baby boom generation" (people born between 1946 and 1964) began their own families. Some of these families are now into their second decade of existence and many have teenage as well as younger children. According to the Napa Valley Unified School District (NVUSD) School Facilities Task Force Report prepared in 1992, the demand for educational facilities will peak during the next decade as school enrollment rates grow at a rate of about twice that of the overall population. Over the longer term, increasing life spans and aging of the same baby boom generation that is now engaged in child rearing will increase demand for housing, facilities and services suitable for seniors.

Figure LU-12 Napa County Population Increase Factors



Ethnic Composition

The 1990 U.S. Census shows the City's population as being 81.7 percent white, non-Hispanic. The largest minority group in the city is Hispanic, totaling 15.2 percent. The remaining 3.1 percent of the population is represented by the following groups: non-Hispanic Black, Native American, Asian and Pacific Islanders, and other.

Income Distribution

In 1993, the relative median income for the City of Napa was $46, 800. Of all households in Napa, approximately 40 percent are considered to be low or very low income. Thirty-five percent of the Hispanic households are very low income, earning less than half of the median income. Another 22 percent are considered low income, earning between 51 to 80 percent of median income. Nine percent earn a moderate income. Hence, over two-thirds of the City's Hispanic households are at an income level that would indicate a need for housing assistance.

Of the white, non-Hispanic households, 20 percent earn a very low income, 18 percent low income, and 9 percent a moderate income. The majority of Black, non-Hispanic households are in low income categories. Forty-five percent of all Native American, non-Hispanic households fall into the low income range (City of Napa 1993).

A detailed discussion of housing trends in the city of Napa may be found in the Housing chapter of this background report.

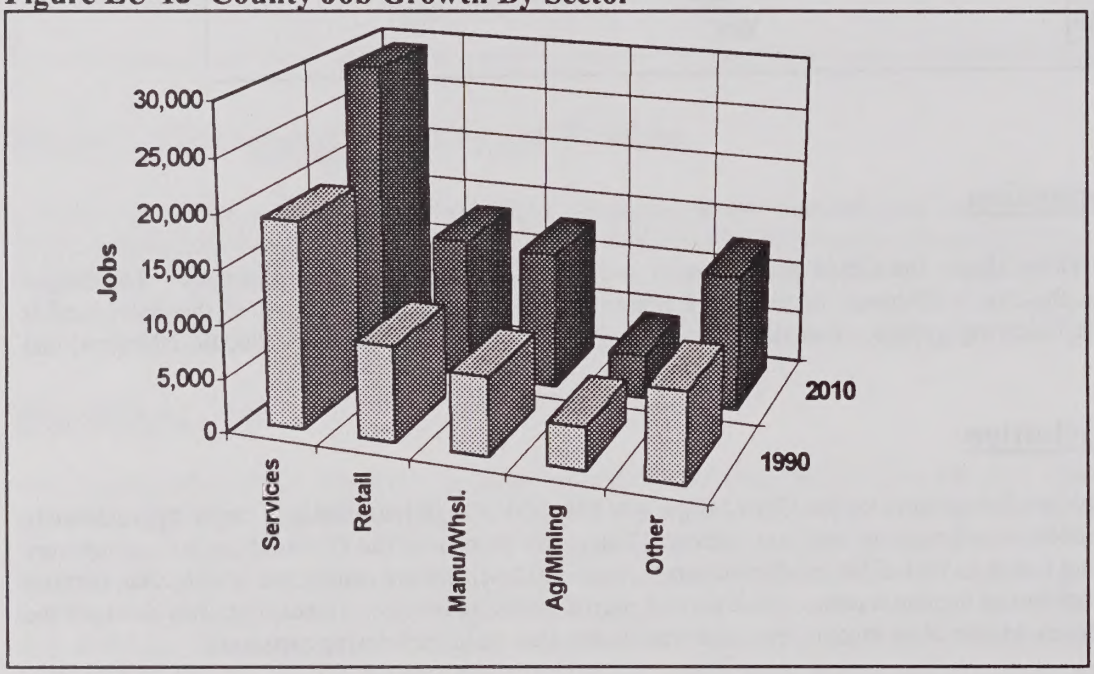
Employment Growth

Despite Napa's high *rate* of job growth during the 1980's, the county's share of regional employment increased by only 0.1 percent and its share of North Bay employment actually declined during the 1970 through 1990 period. ABAG projects total Napa County jobs to increase 52 percent between 1990 and 2010 to over 72,000 jobs, slightly under two percent of the total regional job base.

Most of the county's 24,700 new jobs are expected to be located in either the city of Napa or Airport Industrial area located between the cities of Napa and American Canyon. While 79 percent of total county employment was located in the urban areas in 1990, this ratio is expected to decline slightly as the employment base shifts toward a higher percentage of manufacturing jobs.

Figure LU-13 illustrates the increase projected by ABAG in 1994 for the county's five major employment sectors between 1990 and 2010. The greatest increase (10,000) is expected in the services sector, which has historically concentrated in the county's cities. Consistent with past trends, the city of Napa is expected to post the greatest absolute increase in job growth over the next two decades, primarily in the services and retail sectors.

Figure LU-13 County Job Growth By Sector



It is uncertain what long term effects job losses at Mare Island Naval Shipyard in Vallejo (affecting 1,100 workers residing in Napa County) and the Napa State Hospital (work force recently reduced by 79 employees) will have on the local economy. The employment sectors in Napa county expected to show the strongest growth during the planning period should be relatively unaffected by short term job losses at either facility. Although the closing of Mare Island will impact income growth in the county, its effect will diminish over time as the region begins to move out of recession.

It is interesting to note that county agricultural employment (excluding manufacturing jobs associated with wineries) is projected to decline in both absolute and relative numbers. Instead, the manufacturing and wholesale trade sector is expected to post nearly an 80 percent increase by 2010. Most of the manufacturing and wholesale job growth is projected for food processing and associated businesses, supplemented by a small high technology sector.

Many of the new manufacturing and wholesale trade jobs will be located in the Airport Industrial area. Between 1990 and 2010 ABAG forecasts the area will add about 6,000 new jobs, 16 times the current jobs base. During the same period, the city of Napa's jobs base is projected to grow 40 percent, adding about 14,000 new jobs. As the unincorporated county's employment base shifts from agriculture to manufacturing and wholesale trade, the percent of total employment concentrated in the cities will probably decline.

Assuming regional employment growth occurs as projected, Napa's average annual employment growth rate (1.3 percent per year) should be about double its projected population growth rate. Some of this increase could be absorbed locally by residents currently employed outside the county, *if* the new jobs match residents' skills.

The projected shift in county employment patterns may create both problems and opportunities for Napa county. As the percent of employment increases in the Airport Industrial area the balance of jobs to employed residents will shift. The county is projected to reach a balance between jobs and employed residents around 2005. By 2010 however, jobs are projected to outstrip employed residents by almost 4,000. This imbalance (resulting primarily from Airport Industrial area job growth) could pose policy problems for both the county and its cities.

Jobs/Housing Balance

Jobs/housing balance is a concept that refers to the numerical relationship between the number of jobs and housing units within any given community. The relationship between jobs and housing became important to the Bay Area in the late 1970s and early 1980s, when the high technology sectors associated with Silicon Valley went through a period of rapid growth. Employment growth far exceeded population growth for the region, especially in Santa Clara County. This resulted in extensive cross-regional commute patterns. These long commutes, in turn, contributed to high levels of traffic congestion, significant deterioration of regional air quality, and degradation of the quality of life for residents of the region. These factors led to an analysis of the area's jobs/housing relationship as part of an attempt to strike a balance between the two.

From 1980 to 1990, the city of Napa's jobs/housing ratio increased from a 0.95 to 1.08. In the same period, Napa County's jobs/housing ratio increased from a ratio of 0.94 to 1.10. In general a jobs/housing ratio is considered good if it is approximately 1 job to 1 dwelling unit within a given community, or 1.0. It is assumed that such ratios indicate the majority of residents of both the City and County of Napa at that time lived and worked in the local area.

Although the term "jobs/housing balance" is still typically used to refer to a relationship between jobs and employed residents within any given community, the key relationship is between jobs and the number of employed residents within a community, not number of jobs and housing units. The primary reason for this is that some households have no workers, while other households have multiple workers. Thus, it is more precise to compare jobs and employed residents. The City of Napa's ratio of jobs to employed residents increased in the period from 1980 to 1990 from a ratio of 0.83 to 0.90. This ratio in Napa County also increased in the same period, from 0.82 to 0.90. With these increases, the City and County of Napa approached what is considered a good ratio, i.e., 1.2 jobs for every employed resident. As with the jobs/housing ratio, these ratios indicate that most residents in the City and County of Napa at that time lived and worked in the local area.

While a balance between the number of jobs and employed residents is an appropriate goal, it is important to recognize that Napa is part of a larger regional (Bay Area) labor market. Due to the high degree of worker mobility within this labor market, it is unlikely that the City will achieve a situation in which all employed residents work locally, or that local firms will not require any workers from outside the area. This fact is demonstrated by the City's high worker-out commuter percentage, which exceeds 40% of all employed city workers.

Commute Patterns

On a typical day slightly more than two percent of the nearly 12 million automobile trips generated in the nine county Bay Area begin or end in Napa county. This ratio exceeds the county's regional population and employment share by a significant margin. What this means is that the area's roads are already experiencing an increased traffic load from relatively more trips being generated in and to Napa county than would be expected based on county population or employment alone. Despite its relative isolation in the Bay Area, regional growth continues to exert its influence on Napa.

According to recent statistics from the Metropolitan Transportation Commission (MTC), less than half of all trips on city of Napa streets originate and end within the city. Many people currently travel into or outside the city for work, shopping, personal business or other reasons. While most of these trips originate or end at other points in Napa county, over one quarter of all vehicle trips travel beyond it, mostly for work related purposes.

Except for the Census, there is little in the way of direct information on Napa's commute patterns. The housing demand analysis performed for the 1992 *Jobs Housing Nexus Study* for Napa county by Keyser Marston Associates found that approximately 35 percent of all housing demand created by job growth will be located outside both the city of Napa and unincorporated county. Some of this demand will go outside the county to nearby areas (Fairfield, Vallejo, Benicia, etc.), while some will be absorbed by the smaller Napa communities.

Keyser Marston conducted an employer survey and found that 83 percent of all workers in the county also live within its boundaries (cities included). Conversely, this places the out commute at 17 percent, considerably lower than the percentages reported by either the 1980 or 1990 Census. The *Jobs/Housing Nexus Study* also found the likelihood of working in the county but commuting to a home in another county (primarily Solano) is currently as shown on Table LU 4.

Table LU-4 Workers Commuting to Napa	
City of Napa	15% Commute
South County	45% Commute
North and East County	5% Commute

For years, there have been more employed residents than jobs in Napa county, making it necessary for residents to work elsewhere. In 1980 Napa County had 43,200 employed residents and only 35,800 jobs (an excess of 7,400 workers). By 1990, the county had 52,700 employed residents and about 48,600 jobs (4,100 more workers than jobs). These statistics illustrate the narrowing gap between the total number of employed residents and jobs. The county economy is expected to add 24,670 new jobs between 1990 and 2010. By 2005 the county is expected to have 65,000 jobs and about the same number of employed residents.

These statistics illustrate how the relationship between jobs and employed residents is not a reliable indicator of commuting patterns. The ratio of jobs to employed residents merely represents a net relationship in which the extent of out commuting may be offset by in commuting. The 1980 Census reported the percentage of Napa County workers who commuted to employment locations outside the county was approximately 24 percent (10,300 workers). By 1990 the percentage of Napa workers employed outside the county had risen to 25 percent (13,100 workers), despite the fact that the gap between the number of jobs and employed residents in the county was narrowing.

The fact that the number of commuters has increased, at a time when the county jobs base has been expanding at a faster rate than the region as a whole, indicates an imperfect "fit" between wages and the cost of living in Napa

(and possibly, jobs to residents' skills). These data are supported by the *Jobs/Housing Nexus Study,* which noted it is not known to what extent high housing costs have already affected housing location choice among Napa workers. The study also stated that if all current Napa employees could afford to live in Napa, the existing out commute factor would probably be considerably lower.

It is likely the county's labor force will increasingly include commuting workers from nearby areas. During the 1990-2005 period, the cities of Benicia and Vallejo are expected to add about 22,000 jobs and expand their labor supply by 26,000. It is unlikely however that all the "excess" workers in that area will commute to Napa county. Even taking into account the potential for redistribution of resident workers currently employed outside the county to county jobs, the effect of this potential regional imbalance will be to create substantial demand in Napa County and its cities for additional housing.

As a result of the widening gap between income and cost of housing in Napa, many families have found it necessary to relocate to the more affordable counties to the east and south. Workers in lower paying jobs (such as retail sales and service workers) who cannot find affordable accommodations in or near the city must commute from other locations. At the same time, an increasing number of Napa residents commute outside the county to work. This not only increases the commuter's personal cost of working, it also carries a public cost because of increased traffic congestion and air pollution in the areas they reside and work.

There is a strong likelihood, because of limited low-moderate income housing opportunities in Napa, that any decline in resident out-commuting will be more than offset by in-commuting of workers from nearby areas. The net effect may be a reversal of the direction of daily commuting trips into and out of the area, but no decrease. In fact, an increase in the amount of traffic congestion may occur due to more commuters overall.

ABAG Projections 96

The Association of Bay Area Governments (ABAG) prepares projections for the Bay Area's growth every other year. ABAG released their "Projections '96 during the final preparation of the General Plan. The base data and ABAG references used in this General Plan are based on ABAG's Projections '94. It should be noted that ABAG used the land use information developed for this General Plan in preparing their model for Projections '96. As such, the 1996 projections are closely aligned to those in this plan.

ABAG Projections '96 assumes that household growth in Napa County will occur at a higher annual average in the next twenty years than it did the prior twenty. The ABAG projections assume that the city of Napa and the city of American Canyon will experience the most household and population growth for the county as a whole, citing two reasons; 1) these two cities have the most land available for development; and, 2) they are closest to Bay Area job centers. ABAG projections anticipate that the City of Napa will add around 300 to 350 households per year. Within the City of Napa, ABAG projects an increase of 6,420 households within their *Projections '96* planning period which extends to the year 2015.

It should be noted that State law does not require the City's General Plan to accommodate the absolute level of growth identified in ABAG's projections. ABAG evaluates the City's growth based not only on local information but on regional trends; however, the actual rate and amount of growth is influenced by the City through its land use decisions, along with other factors (such as the state's economy, housing market trends, consumer preferences, etc). The overall results may vary from the growth predicted. It should also be noted that changes in local policy (particularly General Plan policy) affecting the rate or timing of growth will continue to be reflected in future ABAG projections.

Note: Prior to the 12/98 adoption of the General Plan ABAG published their "Projections '98. These projections were not significantly different from the ABAG '96 forecasts for the City of Napa.

End of Chapter 1

CHAPTER 2
HOUSING

INTRODUCTION

A housing element is one of the seven elements required by State Law as part of the general plan. State law is very specific about the content of a housing element and requires that the element be formally reviewed by the California Department of Housing and Community Development (HCD) for compliance with state requirements. The City of Napa's current Housing Element was adopted in 1991 and certified by HCD on December 22, 1992. Since the current element is not required to be updated until 2001, the current housing element has not been formally updated in conjunction with the 1998 General Plan. This chapter updates selective statistics from the 1992 certified Housing Element on housing conditions and trends in Napa. This is an *unofficial* update, however, and readers should consult the 1992 certified Housing Element formally adopted by the City of Napa.

The State requires that housing elements identify and analyze existing and projected housing needs, as well as contain goals, policies, quantified objectives, financial resources, and scheduled programs for the preservation, improvement and development of housing. It must also identify adequate sites for housing, including rental housing, and make adequate provision for the existing and projected needs of all economic segments of the community. It is required to include the City's "fairshare allocation" of regional housing needs as determined by the California Department of Housing and Community Development and the Association of Bay Area Governments.

HOUSING TRENDS AND COMPOSITION

Never a homogenous Bay Area bedroom community, Napa has been an autonomous city with a variety of residents from all walks of life. Historically, the city of Napa has provided much of the county's total housing, sustaining housing opportunities at all income levels. During the 1970s, nearly 57 percent of the total county housing units were built in the city of Napa. During the 1980s, county growth control policies pushed city housing starts to over 87 percent of the decade total.

The city's rate of housing construction averaged less than 200 units per year between 1992 and 1995, a substantial slow down over the previous seven years when nearly 450 units per year were built (Table HB 1). The rate of building new multi-family units averaged 11 percent in the 1970s, but only 4 percent in the 1980s. Since 1991, very few rental units have been built in Napa.

Table HB-1 Residential Building Permits Issued 1985 through 1995						
Year	**Single Family**	**Condo**	**Duplex**	**3 - 4 Units**	**5 or More Units**	**Total Permits**
1985	135	15	8	12	501	671
1986	98	150	2	15	102	367
1987	193	37	0	9	6	245
1988	153	327	4	12	89	585
1989	279	26	8	4	61	378
1990	318	0	10	8	64	400
1991	157	77	2	4	213	453
1992	115	0	14	4	0	133
1993	132	0	16	3	57	208
1994	207	0	2	0	10	219
1995	193	0	0	0	0	193
Average	***180***	***57***	***6***	***7***	***100***	***350***

Source: City of Napa Planning Department

In January 1995, the California Department of Finance reported 26,577 housing units in the City of Napa. Of these, 69 percent were single-family units, 26 percent multi-family units, and 5 percent mobile homes. In the first four years of the 1990s, over 700 single-family units and approximately 300 multi-family units were constructed. In the past three years, very few apartment units have been built, with fewer rental units on the market.

Table HB-2 City of Napa Housing Types - From 1990 Census					
HOUSING TYPE	**1970**	**1980**	**CHANGE**	**% CHANGE**	**RATE OF CHANGE**
1 Unit	9,594	14,914	5,320	36%	4.5%
2-4 Units	828	1,968	1,140	58%	9.0%
5-9 Units	349	826	477	58%	9.0%
10+ Units	497	1,660	1,163	70%	12.8%
Mobile homes					
or trailers	458	850	392	46%	6.4%
Other	996				
TOTAL	**12,722**	**20,218**	**8,492**	**42%**	**4.7%**

Table HB-2 continued

HOUSING TYPE	1980	1990	CHANGE	% CHANGE	RATE OF CHANGE
SFD	13,747	15,330	1,583	10%	1.1%
SFA	1,167	1,710	543	32%	3.9%
2-4 Units	1,968	2,533	565	22%	2.6%
5-9 Units	826	1,280	454	35%	4.5%
10+ Units	1,660	2,374	714	30%	3.6%
Mobile homes					
or trailers, etc.	850	1,695	845	50%	7.1%
TOTAL	**19,368**	**24,922**	**5,554**	**22%**	**2.6%**

Source: City of Napa FY 95-99 Consolidated Plan, Figure 1.12.

HOUSING VACANCY RATES

The vacancy rate in the City has remained at 3.7 percent for the past two years. The City's vacancy rate is less than Napa County's 6 percent. The 1990 U.S. Census portrayed the vacancy rate for one, two and 3-bedroom units.

Table HB-3

Vacancy Rate for Rental Housing by Bedroom Size - 1990

	0-1 Bedroom	2 Bedroom	3 Bedroom	TOTAL
Vacancy Rate	2.6%	1.6%	0.6%	4.77%
TOTAL UNITS	3,410	4,535	2,102	10,047

Source: 1994 CHAS Table 1-B

These rates from the 1990 Census illustrate clearly the correlation between Napa's vacancy rate and the size of rental units. The larger the rental unit, the lower the vacancy rate. Therefore, it is much more difficult for large families to find **any** 3-bedroom rentals that are vacant, let alone affordable. Overcrowding will result as large families continue to reside in smaller units, or share the rent on larger units.

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HOUSING CONDITIONS

According to the 1990 Census, approximately 11 percent of the 1990 housing stock was constructed prior to 1940, with 27 percent built between 1940 and 1959. Approximately 60 percent of the current housing inventory was constructed between 1960 and 1989. Homes built in this later era tend to remain in good condition. Newer developments and subdivisions generally lie on the perimeter of the city limits, in planning areas such as Linda Vista and Vintage.

Housing conditions were evaluated in January 1996 in a random windshield survey of homes in seven older neighborhoods. The condition of housing in these areas varies widely. The largest portion of the older housing stock (63%) lies within the Central Napa Planning Area.

This random windshield survey evaluated the seven areas as shown in Table HB-4. Six different building components were evaluated. Foundation, roof, siding, windows, doors, and miscellaneous features (porches, railings, etc.) were given either minor, major or sound ratings. Major deterioration included two or more structural problems. A minor deterioration rating was given to structures with one deficiency or three or more cosmetic deficiencies. The number of units surveyed, and the number in need of repair include:

	Total Units Surveyed	**# in Need of Repair**
Alta Heights	105	36
Central Ave Area	93	26
Westwood	126	45
A-B-C Streets	118	37
Downtown West	152	36
Calistoga/St Johns	165	67
Downtown East	114	43

The survey results are highlighted in Table HB-4, and the neighborhood locations are identified in Figure HB-1. As Table HB-4 shows, 33 percent of homes in these seven areas show signs of requiring some level of repair with 97 percent of the repair work being minor and only 3 percent major in nature. In all of the surveyed areas, 70 percent of the homes in need of repairs require roof repair. Siding improvements is the next highest repair item, attributed to 50 percent of the total units identified in need of repair.

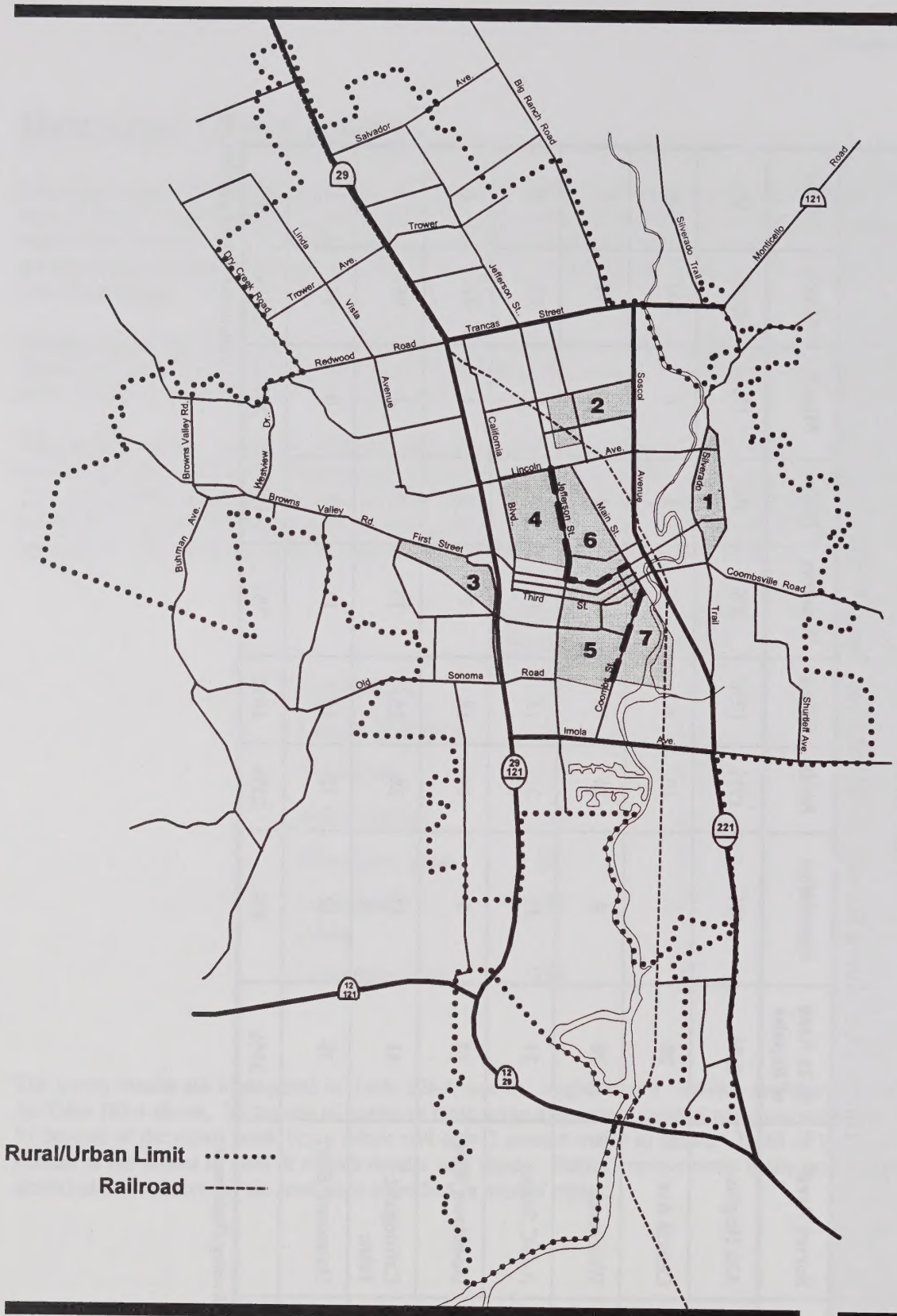
Table HB-4

Housing Condition Survey - Selected Older Neighborhoods

Planning Area	Survey Area	% In Need of Repairs	Foundation	Roofs	Siding	Windows	Doors	Misc.*	Minor	Major
Alta Heights - Area 6	Alta Heights	33%	8%	19%	12%	8%	3%	1%	100%	0%
Beard - Area 5	Central Ave	28	3	26	6	0	1	1	100	0
Westwood - Area 7	Westwood	38	4	24	18	4	4	4	100	0
Central Napa - Area 8	A-B-C Streets	31	12	21	15	13	8	3	95	5
Central Napa - Area 8	Downtown West	24	5	14	18	2	2	4	94	6
Central Napa - Area 8	Calistoga/St. Johns	41	13	28	25	13	7	4	96	4
Central Napa - Area 8	Downtown East	38	12	32	15	11	2	0	96	4
TOTAL		**33%**	**8%**	**23%**	**16%**	**7%**	**4%**	**3%**	**97%**	**3%**

Source: City of Napa Planning Department

**Miscellaneous repairs: porches, etc.*



City of Napa General Plan

Conditn.DS4

12/98

Figure - HB 1

Housing Conditions Survey

North

725' 1/2 Mile 1 Mile 3 Miles

0

1 - Alta Heights
2 - Central Ave Area
3 - Westwood
4 - A.B.C. Streets
5 - Downtown West
6 - Calistoga/St Johns
7 - Downtown East

Source: City of Napa Planning Department

envision NAPA 2020

HOUSING COSTS AND AFFORDABILITY

For Sale Housing Prices

In July 1992, the average price of a home sold in the city was $257,781 (median price was $200,000). In May 1993, the National Association of Home Builders released their annual study of the most/least affordable housing market in the United States. Only 25.6 percent of the median-income households in the Napa-Vallejo-Fairfield market could afford the prices of homes in the last quarter of 1992. Nearly 75 percent of area households could not afford to buy. (When relatively more affordable Vallejo and Fairfield are excluded, the percentage of Napa households excluded from the market is higher.)

As of 1995, a family wishing to purchase an average priced home in the city would expect to pay about $1,400 per month toward their mortgage. Using standard affordability guidelines, that family would need to earn $4,800 per month to "afford" their mortgage. Only 25 percent of Napa's families earn incomes at or above this level.

Although many city residents cannot afford to buy even a most modestly priced home, new single family housing accounted for 64 percent of all new housing constructed between 1980 and 1990. Napa's natural amenities make the city appealing to upper middle income workers willing to commute to distant Bay Area and Sacramento jobs. In recent years, new moderate and higher priced homes have often been marketed to families relocating from outside the Napa area. This trend can be seen in the population change of the past five years as an increase in (in)migration.

A 1994 study conducted by the Napa County Association of Realtors confirmed this trend. The first quarter 1994 home sales study found only 5 percent of all buyers in the lowest purchase price range ($80,000 to $149,999) were relocating from outside the county. The percentage steadily increased over the next three categories to 40 percent by out-of-county buyers in the $300,000 to $499,999 range. These statistics point to a smaller local "trickle down" real estate market than might be expected based on the volume and average price range of new construction. Owner-occupied housing is much less affordable than rental housing. The following table, based on 1995 HUD data, demonstrates that only 11 percent of ownership housing is affordable for families at 80 percent of the median income. For families making 50 percent of the median income or less, it drops to 7%, with the only affordable housing being the smaller sized, older, and less-in-demand units.

As an example, a household composed of one unskilled parent and two small children living on one income are very likely earning no more than 30% of the median income for the area or $14,040 per year for a family of three. Housing costs for a two bedroom apartment are a minimum of $700 per month. This means that a very low income household earning $14,340 per year would be spending 50 percent of its income, and often more, for housing.

Perhaps the most at-risk group are farmworkers. The 1989 special survey of farmworker housing needs found that over 35 percent had a severe cost burden. In addition, more than 80% of farmworkers lived in overcrowded conditions and half lived in extremely overcrowded conditions.

Table HB-5
1995 Income Ranges in Napa by Family Size

Family Size	30% median	**Very Low** 50% median	60% median	**Low income** 80% median	**Moderate** 100% median
1 person	$10,050	$16,750	$20,100	$26,750	$33,500
2 person	11,450	19,100	22,950	30,600	38,200
3 person	12,900	21,500	25,800	34,400	43,000
4 person	14,350	23,900	28,700	38,250	47,800
5 person	15,500	25,800	30,950	41,300	51,600
6 person	16,650	27,700	33,250	44,350	55,400
7 person	17,800	29,650	35,550	47,400	59,300
8 person	18,950	31,550	37,850	50,500	63,100

Source: U.S. Department of Housing & Urban Development, Home Program Income Limits, April 1995, for Vallejo-Fairfield-Napa Area.

Table HB-6
Percentage of Napa Households Paying Too Much for Shelter

Income Category	Renter Households		Owner Households		Total Households	
	Cost Burden >30%	Severe Cost Burden >50%	Cost Burden >30%	Severe Cost Burden >50%	Cost Burden >30%	Severe Cost Burden >50%
Very Low Income 0-30% MFI*	73%	62%	73%	46%	73%	58%
Very Low Income 31-50% MFI	87%	47%	47%	23%	71%	37%
Other Low Income 51-80% MFI	60%	10%	35%	15%	48%	13%
Moderate Income 81-95% MFI	28%	5%	33%	5%	31%	5%

* *Median Family Income (MFI)*

Table HB-7 Percentage of Occupied Units Affordable to Households Below 30%, 50%, or 80% of Median Income, 1990				
Rental Units				
Income Range	0-1 Bedroom	2 Bedroom	3+ Bedroom	Total
0-30%	11% (336)	5% (225)	4% (79)	7% (640)
31-50%	24% (767)	12% (527)	13% (272)	16% (1566)
51-80%	81% (2537)	84% (3688)	45% (921)	75% (7146)
Total Occupied Units	3145	4377	2046	9568
Owner Units				
Income Range	0-1 Bedroom	2 Bedroom	3+ Bedroom	Total
0-30%	42% (244)	9% (318)	1% (65)	4% (627)
31-50%	49% (287)	17% (648)	1% (82)	7% (1017)
51-80%	56% (324)	26% (963)	3% (253)	11% (1540)
Total Occupied Units	583	3727	10,036	14,346

Source: CHAS Databook Table 4, "Owner/Renter Units Affordable to Households with Incomes Below 30%, 50% or 80% HAMFI, by Bedroom Size and Occupancy Status."

Rental Housing Costs

In 1995, market rents for a two-bedroom apartment ranged from $500 to $750 per month. Three-bedroom apartments averaged $850 per month. Rental two-bedroom homes and duplexes could be found at $700 to 850 per month. Three-bedroom homes rented from $950 to $1,000 per month. (Source: Napa Housing Authority.) HUD fair market rent limits for the Napa area in 1995 stood at $580 for a 1-bedroom, $707 for a 2-bedroom, $983 for a 3-bedroom, and $1,160 for a 4-bedroom unit.

As the widening gap between household income and the cost of housing has begun to shut moderate income residents out of the for-sale housing market, the cost of rental housing has also increased. As a result, low and even moderate income workers (such as health care professionals, police, firefighters, and teachers) are finding that commuting from more affordable areas is a more cost effective solution. This is not only time consuming and increases the personal cost of working, but also carries a public cost due to increased traffic congestion and air pollution. And, when workers must split their time between two communities where they live or work, they often find their involvement in both places is weakened. The alternative for many families who choose to stay in Napa is to pay more than they can afford for housing, or to crowd into units too small for their needs.

Generally, older housing costs less and houses lower income households. At the time of the 1990 Census, the city had 2,522 pre-1940 housing units. Renters occupied 45 percent of these older units. Of these renters, 82 percent were very low and low income families.

The current rental stock is not affordable for very-low and low-income renter families. Only 16 percent of now-occupied units are affordable for families at 50 percent of median income, and only 7 percent for families making

less than 30 percent of median. Of all households now living in Napa, 40 percent are low- or very-low income families.

Overall, 75 percent of currently occupied rental units are affordable for families making 80 percent of median income. However, only 45 percent of three+ bedroom units are affordable to these same households. As income goes down, the percentage of affordable rental units drops dramatically.

As family need for larger unit housing increases, the quantity of affordable units decreases. Less than 1/5 of the current rental units is 3-bedroom or larger. These units have the lowest vacancy rate, making it extremely difficult for large, renter households to find any vacant 3-bedroom or larger units, let alone affordable housing.

Renter households are twice as likely to have a housing problem (52%) as do owner households (27%), and the problem is most critical for very-low income renters (75%), as well as low-income renters (70%). Housing problem is defined as occupying a substandard unit, overcrowding, or paying more than 30% of gross income toward shelter costs. Over 62 percent of very-low income renter families pay more than 50 percent of their gross income for rent.

While the private market can, in theory, provide new housing affordable to those at the top end of the low-income range (income approaching 80 percent of median), Napa has experienced very limited development of any rental housing in the past five years, including affordable housing. The lack of private market rental house is due to (1) changes in the income tax codes that reduced incentives for multi-family unit investor-builders; (2) California's slow economy, with very little change in rental rates yielding little profit, and (3) a smaller supply of land, creating high land costs. Without enough monetary return, investors are not willing to bear the high cost of building rental units. Affordability and land costs are today's determining factors.

During the 1995 *Consolidated Plan* development process for HUD, the 12 agencies participating in the Napa Housing Alliance identified the City's highest housing priority to be <u>increased rental housing for low and very low income families.</u> They recommended that the City meet that need by:

1. New construction of family units;
2. Acquisition of market rate rental property with subsidized funds to allow below-market rents;
3. Acquisition and rehab of rental housing which is deteriorating and/or overcrowded, and in danger of being lost as housing stock.

FUTURE HOUSING NEEDS

ABAG Fairshare Allocation

<u>Housing Needs Determination</u>

State legislation enacted in 1980 requires the Association of Bay Area Governments (ABAG) to determine existing and projected Bay Area regional housing needs for persons of all income levels. ABAG also determines each county's and each city's share of regional housing needs. The figures are based on market demand for housing, employment opportunities, land availability, commuting patterns, type and tenure of housing and the provision of sufficient (4.5 percent) housing vacancy rate. State law requires all cities and counties to consider the regional housing needs share in preparing the housing element.

The last regional housing needs figures for Napa were published by ABAG in January 1989 and covered the planning period 1988 through 1995 (extended in 1996 by the State legislature to 1999). The ABAG need determination called for the production of 3,571 units. Following acceptance of the ABAG fairshare estimate by

the City, the figure was recognized in the City's Housing Element certified in 1991. State Law requires ABAG to allocate housing needs by income category. For the 1988 to 1995 period, ABAG's housing needs determinations called for the production of a total of 3,571 units, of which 893 units (25%) were to be affordable to very low-income households (below 50 percent of median income for the area), 607 units (17%) were to be affordable to low-income households (50 to 80 percent of median income), 750 units (21%) affordable to moderate-income households (80 to 120 percent of median income), and the remaining 1,321 units (37%) for above-moderate income families (over 120 percent of median income). The current, 1992 certified Housing Element indicates that Napa has sufficient land to accommodate projected housing needs.

ABAG Projections 96

The Association of Bay Area Governments (ABAG) prepares projections for the Bay Area's growth every other year. ABAG released their "Projections '96 during the final preparation of the General Plan. The base data that had been compiled for this General Plan extends to the year 2020 and was provided to ABAG for use in developing their projections. ABAG made adjustments to the City's data in their mode, based on their assessment of regional trends, and therefore, their resulting predictions are slightly different than the results prepared for the General Plan.

ABAG Projections '96 assumes that household growth in Napa County will occur at a higher annual average in the next twenty years than it did the prior twenty. The ABAG projections assume that the city of Napa and the city of American Canyon will experience the most household and population growth for the county as a whole, citing two reasons; 1) these two cities have the most land available for development; and, 2) they are closest to Bay Area job centers. ABAG projections anticipate that the city of Napa will add around 300 to 350 households per year. Within the city of Napa, ABAG projects an increase of 6,420 households within their planning period (from 1995 to 2015).

End of Chapter 2

CHAPTER 3
TRANSPORTATION

INTRODUCTION

The transportation chapter of the background report provides information on the existing conditions of all of the principal modes of transportation serving the city, including streets, highways, transit, bicycles, pedestrians, truck and rail modes as well as parking facilities. This information is the basis for the policies and programs in the General Plan Policy Document. This base information was extracted from the *City of Napa Circulation Element Update: Summary of Existing Conditions* (1992), prepared by Dowling Associates.

Regional Context

Napa is part of the greater nine-county Bay Area consisting of Napa, Sonoma, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, San Francisco and Marin Counties. These nine counties are bound together by a number of regional governmental agencies for land use and transportation planning purposes. ABAG, the Association of Bay Area Governments, has regional responsibilities for population forecasting and its forecasts can have a significant impact on transportation issues. MTC, the Metropolitan Transportation Commission, has jurisdiction over the allocation and distribution of all Federal and State transportation funding, and thus has a direct role in the level of funding that reaches Napa County and ultimately the City of Napa. MTC also maintains a regional travel forecasting model which is used as the forecasting tool in support of most major regional transportation improvement projects.

The City retained, Dowling Associates to create a travel forecasting model for both the City and County of Napa in connection with the city's General Plan Update. The completed model is able to provide a range of transportation demand statistics for all Napa jurisdictions. Data from the MTC model was used to help define Napa's role in the region from a transportation point of view.

MTC "existing conditions" basis is a data set put together to represent travel in 1987. This data set was used for calibration of their model and, while it is now 9 years old, it still reasonably portrays travel patterns as they affect Napa. On a typical day in 1987, MTC estimated that a total of 11,734,000 automobile trips were generated in the nine-county Bay Area. Of this total, only 271,000 (2.3%) started or ended in Napa County. This ratio exceeds the County's population share of the Bay Area, which stands at approximately 1.8%. Napa is the smallest of the nine Bay Area Counties both in terms of travel generation and population, a fact that affects both its influence in regional matters and the amount of funding from State and Federal sources that flows into the County.

MTC data indicates a dramatic interdependence between Napa and the rest of the region. According to MTC statistics, less than half of the trips in the City of Napa actually stay in the City. Many trips are made from other areas of the County to the City of Napa. Many people in Napa also go outside the City and the County for work, shopping, personal business or other reasons. In terms of transportation facilities connections, the most critical areas of concern are SR 29 south of the City and SR 12 east of SR 29. The intersection of these two highways

currently operates at a Service Level F. The two lane section of SR 12 in both Napa and Solano Counties (Jameson Canyon) carries some of the highest volumes in the Bay area for two lane roads. To the south, SR 29 is expected to increase in congestion, particularly if major development occurs in the newly incorporated City of American Canyon.

In summary, the data from the MTC travel model indicates that while Napa County and the City of Napa may be a small part of the region, both have significant interactions with the region. Transportation planning for both the City and County will continue to need to be cognizant of the opportunities, the demand and the constraints related to their interaction with the nine county region.

Napa's Transportation System

Napa's transportation system is the framework around which all of the supporting members of the City are placed and through which many of its activities are energized. As a mature City, Napa's transportation system is well developed and built out to its maximum requirements in most locations. Due to its relative distance from the major Bay area commuter corridors and due to its relatively slow growth, Napa has escaped the overwhelming burdens of traffic congestion that are commonplace during rush hours in most California metropolises.

By the standards of most communities in the San Francisco Bay Area, Napa's streets are relatively uncongested. According to the traffic study prepared for this General Plan, only on e signalized intersection in the city regularly operates at what traffic engineers consider to be an unacceptable level (Trancas Street and Highway 29). Most Napans do not measure traffic congestion by Bay Area standards. Long time residents often compare current traffic volumes unfavorably to past conditions. By that measure, there is a perception that many of Napa streets are becoming unacceptably congested.

Napa is not considered a commuter suburb; however, information from the Metropolitan Transportation Commission indicates that the amount of commuting to and from the City is on the rise, contributing to higher traffic loads on the major roads into and out of Napa.

The heart of Napa's transportation system is its streets and highways, which provide the means for virtually all mobility within the city. In order to ensure adequate transportation options to residents in the future, roadways must be planned to accommodate projected traffic without unacceptable congestion as part of a broader transportation management program. This does not mean that over dependence on the personal automobile is in the community's best long term interest. The high environmental and monetary cost of maintaining this dependency are well documented; the more roads are widened or built, the faster they are filled by vehicles. Too many wide roads divide a community and increased vehicle travel leads to unacceptable noise levels and degraded air quality.

STREET AND ROADWAY SYSTEM

Roadway Functional Classification System

Based on volumes and travel patterns, streets can be classified based on their function. Figure TR-1 shows principal roadways in Napa and their use according to the functional classification system. The 1982 General Plan identified three facility types as follows:

Arterial. The primary function of an arterial street is to provide for traffic movement between and across major areas of a city, or through the entire city, and to the freeway-expressway system. Provision of direct access to abutting land is a subordinate function.

Collector. Collector streets link small areas or neighborhoods to the arterial street system and supplement the arterial system's primary function. They also carry much of the through traffic within residential, industrial, and commercial areas and serve to connect adjacent neighborhoods. An important part of their function is provision of access to abutting property.

Local Access. Local access streets are intended to provide direct access to residential, commercial, industrial, and other abutting land. These streets serve local traffic movements and are not intended to handle through traffic.

In addition to the three classes of street included in the 1982 Circulation Element there are two other classes present in Napa:

Freeways. Freeways are restricted access facilities intended to provide for high-capacity movement of traffic over moderate to long distances. Access is restricted to interchanges spaced at intervals of 1 to 2 miles.

Expressways. Expressways are an intermediate classification between arterials and freeways. They commonly have cross-sections typical of arterial streets, but will have traffic signal-controlled intersections at spacings of one-half to one mile.

Crucial Corridors

During the preparation for the 1982 Plan, the circulation study technical report revealed that two important arterials, Jefferson and Trancas Streets, were approaching carrying capacity. It was determined that these arterials, and possibly others, provide a vital role in community wide circulation and in providing accessibility to key community facilities. The City established a policy to designate these important arterials as "Crucial Corridors" and developed policies to ensure that the remaining capacity of these roadways would be utilized to serve community-wide needs rather than be pre-empted to serve fronting properties. Such policies included limiting new development to non-traffic intensive uses which typically generate no more than 520 trips/day/acre. Requirements were adopted into the Zoning Ordinance in the form of an overlay zone on properties that front crucial corridors; enabling a comprehensive review of land use impacts on the operation of the arterial before a use can be allowed.

Trancas Street, Jefferson Street, Imola Avenue, and Soscol Avenue are identified as crucial corridors that fill a vital role in community-wide circulation and in providing access to key community facilities. The evaluation of existing conditions below focuses on crucial corridors.

Intersection Levels of Service

Methodology

The traffic engineering profession has developed a standard method of evaluating operating conditions on street systems. The method involves the definition and evaluation of the "level of service." In urban areas, levels of service (LOS) are generally evaluated at intersections, while in rural areas, highway segments are generally evaluated. Table TR-1 shows the standard list of six levels of service (A through F), together with the criteria for evaluating these levels at signalized intersections. Table TR-2 presents the level of service criteria for intersections controlled by stop signs. Highway Capacity Manual (HCM) techniques were used to evaluate stop-controlled intersections and the HCM operations method was used at signalized intersections. These techniques are used throughout the profession to evaluate traffic operations.

The methods used to evaluate stop-controlled intersections and signalized intersections differ somewhat. The evaluation of signalized intersections is based on average delay to the entire intersection. Stop-controlled intersections are evaluated based on minor movements (i.e., vehicles on the side street and left turns from the major street). The Dowling Associates analysis of stop-controlled intersections evaluates all of the minor movements, but defines the intersection LOS based on the *worst* case among all of the minor movements. The HCM operations method considers a vast range of factors which can influence intersection capacity. As a simplification, a set of standard default factors was developed in association with City staff.

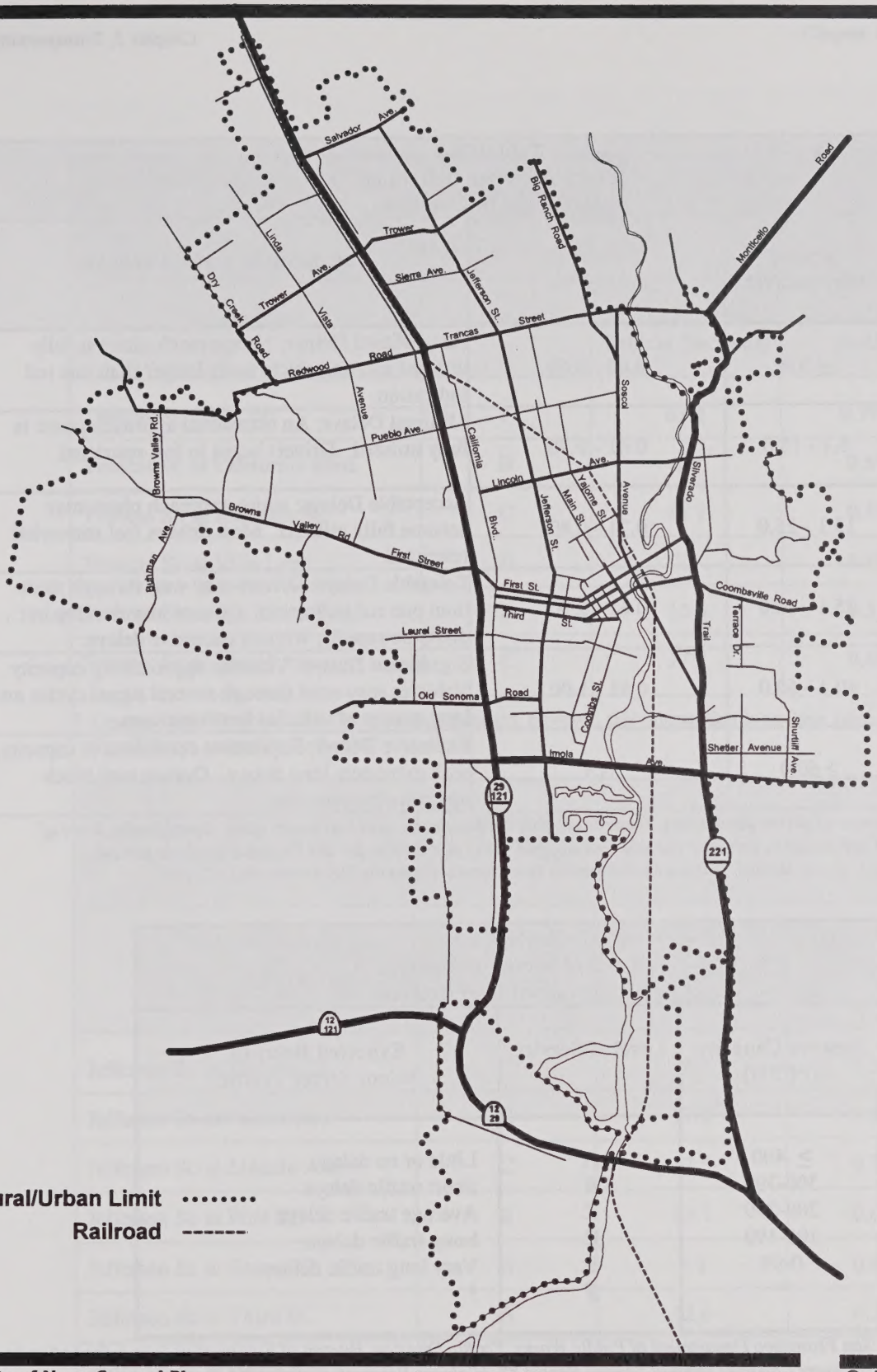
Existing Levels of Service

Table TR-3 through TR-8 describe the existing (1992) LOS on Napa's street system. The data are based on traffic counts made in 1991 and 1992 and are taken from a number of sources, including the City's own records and counts made by various traffic engineering consultants. Tables TR-3 through TR-6 document the four crucial corridors — Trancas Street, Jefferson Street, Imola Avenue, and Soscol Avenue. Table TR-7 shows the LOS at intersections along SR 29, while Table TR-8 documents various other locations in the city. Level of service for signalized intersections is defined in terms of delay.

As these tables illustrate, most intersections and corridors within the Napa city limits are operating at LOS C or better. Nevertheless, there are seven City-controlled intersections that operate at service levels worse than C: Jefferson/Lincoln, Imola/South Coombs, Imola/Soscol, Soscol/Lincoln, Soscol/Silverado Trail, Third/Silverado Trail, and Lincoln/California. The intersection of SR 29 at Trancas, the only intersection within the City where LOS F is computed, is the most congested intersection in the City. A major improvement program is planned for this intersection which will create an urban interchange in place of the intersection and improve the intersection to LOS D (Bruechert 1994). The intersection of SR 221 (Soscol Avenue) with SR 29, which is outside the City limits, also operates of LOS F.

Congestion Management Program

Another service level criterion of interest is one developed for the Napa County Congestion Management Program (CMP). At the time this General Plan update was prepared, the CMP was a legislative requirement in all metropolitan regions of California and included a service level standard. The CMP facilities in the City of Napa are State Routes 12, 29, 121, and 221 and Trancas Street. Napa County selected LOS E as its standard on all CMP facilities in that portion of the county south of Oak Knoll Avenue (LOS D is the standard north of Oak Knoll). As discussed in Chapter 1, Land Use, in this background report, the state mandate for a CMA (Congestion Management Agency) was eliminated by state legislation in 1997. In 1998, the Napa County CMA was transitioned into a Joint Powers Agency entitled the Napa County Transportation Planning Agency (NCTPA). The NCTPA is charged with the development of a Strategic Transportation Plan and Program for highways, streets and roads, transit, paratransit, and bike paths within the Napa region. Regardless of the change in status of regional transportation planning, it is important to note that the cooperative transportation modeling that was accomplished during the existence of the CMA was a valuable transportation planning resource during the preparation of this General Plan.



Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan | Roadways.DS4 | 12/98

Figure - TR 1

Principal Roadways and Classifications

North

725' 1/2 Mile 1 Mile 3 Miles

0

State Highways

Arterials

Collectors

(Local Streets are not shown)

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While every effort has been made to insure the accuracy of the information shown on this page, the City of Napa assumes no responsibility for liability from any errors or omissions.

Table TR-1 Level of Service Definitions Signalized Intersections			
Level of Service	Stopped Delay (sec/veh)	Volume to Capacity Ratio	Description of Traffic Condition
A	≤ 5.0	0.00 - 0.60	Insignificant Delays; No approach phase is fully utilized and no vehicle waits longer than one red indication.
B	5.1 - 15.0	0.61 - 0.70	Minimal Delays: An occasional approach phase is fully utilized. Drivers begin to feel restricted.
C	15.1 - 25.0	0.71 - 0.80	Acceptable Delays: major approach phase may become fully utilized. Most drivers feel somewhat restricted.
D	25.1 - 40.0	0.61 - 0.90	Tolerable Delays: Drivers may wait through more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.
E	40.1 - 60.0	0.91 - 1.00	Significant Delays: Volumes approaching capacity. Vehicles may want through several signal cycles and long queues of vehicles form upstream.
F	≥ 60.0	NA	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.

Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level of service criteria are stated in terms of the average stopped delay per vehicle for a 15 minute analysis period.
Source: Highway Capacity Manual, Transportation Research Board Special Report No 209, Washington D.C., 1985.

Table TR-2 Level of Service Definitions Unsignalized Intersections		
Reserve Capacity (PCPH)	**Level of Service**	**Expected Delay to Minor Street Traffic**
≥ 400	A	Little or no delay
300-399	B	Short traffic delays
200-299	C	Average traffic delays
100-199	D	Long traffic delays
0-99	E	Very long traffic delays
*	F	*

Source: *San Francisco Department of Public Works, Traffic Division, Bureau of Engineering from information in Highway Capacity Manual Special Report 87, Highway Research Board, 1965.*

Note: PCPH is passenger car equivalents per hour.

* *When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement to the intersection.*

Table TR-3
Existing PM Peak Hour Level of Service - 1992
Trancas Street Corridor

Intersection	Service Level	Average Delay/ Vehicle (Seconds)	Volume/Capacity Ratio
Trancas St. at SR 29*	F	61.2	0.99*
Trancas St. at California Blvd.	B	6.8	0.59
Trancas St. at Jefferson St.	C	18.7	0.50
Trancas St. at Villa Lane	B	7.3	0.42
Trancas St. at Big Ranch Road	B	13.6	0.57
Trancas St. at Soscol Ave	C	17.7	0.66

* Operates at LOS worse than City's desired standard; however, this intersection is on State route and therefore not controlled by the City.

Table TR-4
Existing PM Peak Hour Level of Service - 1992
Jefferson Street Corridor

Intersection	Service Level	Average Delay/ Vehicle (Seconds)	Volume/Capacity Ratio
Jefferson St. at Trancas St.	C	18.7	0.50
Jefferson St. at Pueblo Ave	C	17.1	0.58
Jefferson St. at Lincoln Ave.*	C	17.5	0.77
Jefferson St. at First St.	B	13.7	0.67
Jefferson St. at Second St.	B	9.1	0.43
Jefferson St. at Third St.	B	12.6	0.39
Jefferson St. at Imola Ave	C	15.6	0.49

* Operates at V/C ratio worse than City's desired standard.

Table TR-5
Existing PM Peak Hour Level of Service - 1992
Imola Avenue Corridor

Intersection	Service Level	Average Delay/ Vehicle (Seconds)	Volume/Capacity Ratio
Imola Ave at South Coombs St.*	D	25.5	0.87*
Imola Ave at South Jefferson St.	C	15.6	0.49
Imola Ave at Soscol Ave.*	D	25.6	0.88

* Operates at LOS and V/C ratio worse than City's desired standard.

Table TR-6
Existing PM Peak Hour Level of Service - 1992
Soscol Avenue Corridor

Intersection	Service Level	Average Delay/ Vehicle (Seconds)	Volume/Capacity Ratio
Soscol Ave at Trancas St.	C	17.7	0.66
Soscol Ave at Lincoln Ave.*	C	19.9	0.89
Soscol Ave at First St.	B	11.8	0.56
Soscol Ave at Third St.	B	14.8	0.57
Soscol Ave at Silverado Trail*	D	25.0	0.95
Soscol Ave at Imola Ave.*	D	25.6	0.88
SR 221 (Soscol Ave) at Streblow	B	5.4	0.56
SR 221 (Soscol Ave) at Kaiser Rd	B	6.1	0.54
SR 221 (Soscol Ave) at SR 29**	F	63.6	0.97

* Operates at LOS and V/C ratio worse than City's desired standard.

** Operates at LOS worse than City's desired standard; however, this intersection is on State route and therefore not controlled by the City.

Table TR-7 Existing PM Peak Hour Level of Service - 1992 SR 29 Corridor			
Intersection	**Service Level**	**Average Delay/ Vehicle (Seconds)**	**Volume/Capacity Ratio**
SR 29 at Salvador Ave	B	7.1	0.54
SR 29 at Trower Ave.*	C	17.4	0.82
SR 29 at Trancas St.*	F	61.2	0.99
SR 121 at SR 29*	D	27.3	0.99

* Operates at LOS worse than City's desired standard; however, this intersection is on State route and therefore not controlled by the City.

Table TR-8 Existing PM Peak Hour Level of Service - 1992 Other Signalized Intersections			
Intersection	**Service Level**	**Average Delay/ Vehicle (Seconds)**	**Volume/Capacity Ratio**
First at Silverado Trail	B	7.6	0.54
Second St. at Main St.	B	7.0	0.33
Third St. at Main St.	B	8.7	0.59
Third St. at Silverado Trail*	B	13.5	0.79
Lincoln Ave at California Blvd.*	C	20.5	0.82
Lincoln Ave at Silverado Trail	B	10.8	0.57

* Operates at LOS worse than City's desired standard; however, this intersection is on State route and therefore not controlled by the City.

Source of all Table Data: Dowling Associates, Transportation Consultants

TRUCK ROUTES

The City has identified a portion of the street and highway system that are to serve as truck routes. The routes are established by City Ordinance and are not currently part of the General Plan Figure TR-2 shows the current truck routes adopted by the City.

As with the street and highway classification system, the designation of truck routes serves two distinct purposes. They provide a means of access and through movement for large trucks and thereby maintain the needed circulation opportunities for an important economic segment of the community. They also provide a certain amount of noise and vibration protection to streets not designated as truck routes.

Napa's current truck route system is somewhat limited and does not contain the level of continuity that is present in the remainder of the circulation system.

PARKING

The city currently imposes a parking ratio requirement on land uses through its zoning regulations. On-street parking in the right-of-way is not considered to apply to the parking requirements for land uses. In the downtown, where the city has constructed parking garages, a parking exempt overlay zone is applied to properties, no parking requirement is imposed.

Parking standards are included in the zoning code and in the Public Works standards which specify the dimensional and improvement requirements for parking facilities. These include landscape standards for parking lots.

TRANSIT SERVICES

Napa is presently served by two transit systems: the City-operated Napa Valley Intracity Neighborhood Express and Napa Valley Transit, operated by the County and Napa County cities. The area served by these systems is illustrated in Figure TR-3.

Valley Intracity Neighborhood Express

As part of its public transit system, the City of Napa operates a five route, eight bus fixed route transit system called the VINE (Valley Intracity Neighborhood Express), serving most major trip generators between the hours of 6:45 A.M. and 6:30 P.M. weekdays, and 7:45 A.M. and 6:00 P.M. Saturdays. There is no fixed route service on Sundays and major holidays. The VINE provides service along five different routes, as follows:

Route 1: This route travels from Napa College on the south, through downtown, and westerly along Browns Valley Road. Weekday service begins at 6:45 A.M. and ends at 6:27 P.M. Most service is provided at 30-minute headways (intervals).

Route 2: Route 2 connects the northwest quadrant of the City to the southeast quadrant (Imola Avenue), via the downtown. Service hours and headways are the same as for Route 1.

Route 3: This route provides service primarily along a one-way loop in the southwest quadrant (Old Sonoma Road) of the City. Service durations and headways are the same as for Routes 1 and 2.

Route 4: The areas served by Route 4 are the area north of downtown, the far northwest area north of Trancas Street, and north up to Orchard Avenue, where a transfer point occurs for transit up valley. Service is provided hourly, departing from the downtown transit center from 6:45 A.M. to 6:00 P.M.

Route 5: Route 5 travels between downtown and the northwest portions of the City, as far as Vine Hill Drive. Service is provided hourly from 6:45 A.M. to 5:30 P.M.

All routes serve the downtown transit center at Pearl and Coombs Streets, where buses meet to provide a "timed transfer," or "pulse system." Service is provided on Saturdays on less frequent schedules, but no service is provided on Sundays or holidays. Fares are 75 cents for adults, 50 cents for students, 40 cents for children under 13, and 35 cents for seniors/handicapped.

The system provides a relatively high level of service, with three routes in the most heavily populated and most demographically likely to be transit-dependent areas operating on half-hour headways during the week. The other two routes operate on hourly headways. Additional service is added during the school year to accommodate the peak loads of students who use the system for trips primarily to middle and high schools in Napa. All schools within the city limits are served by direct transit routes within one block of the schools.

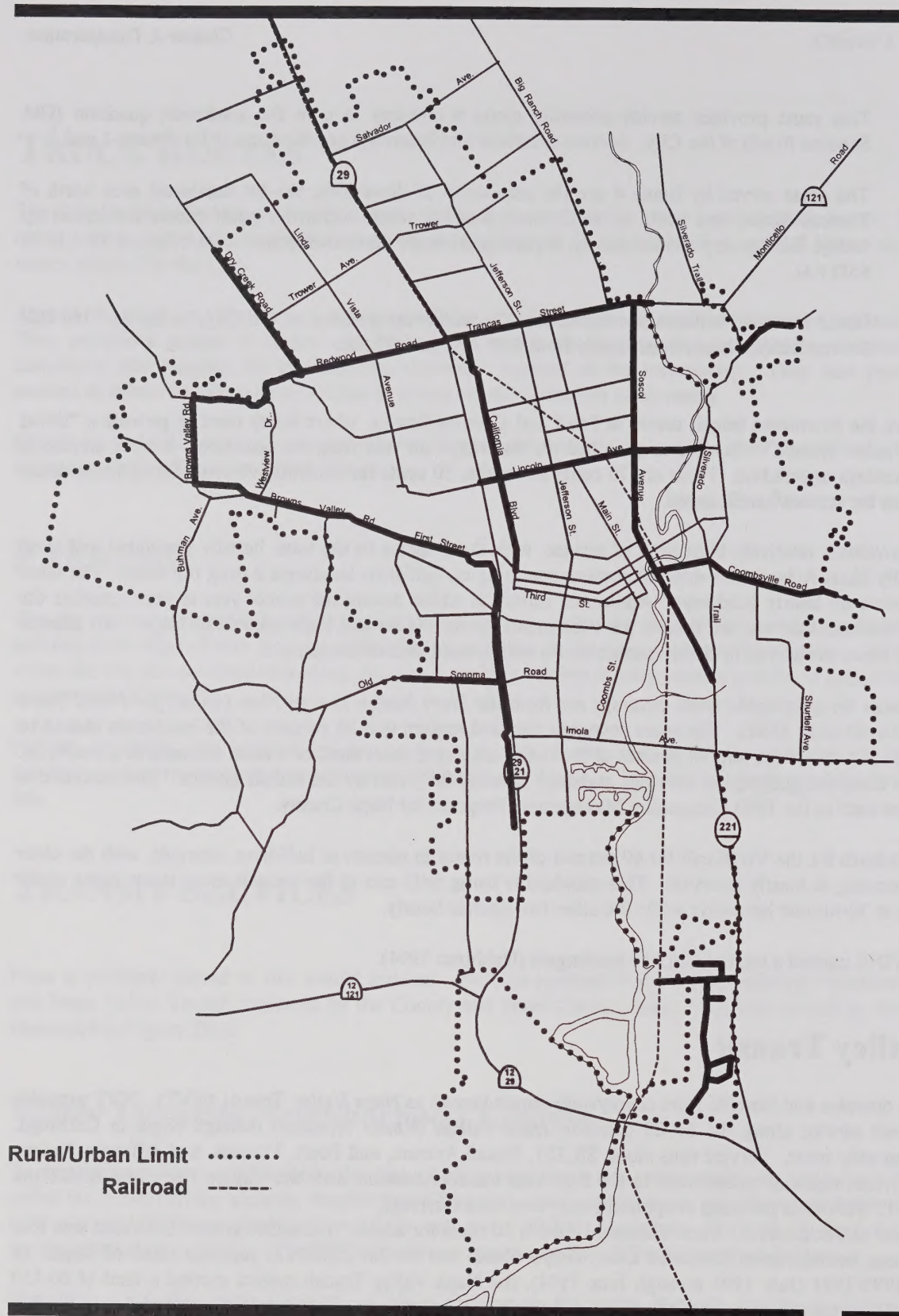
Current standards for geographic route coverage are from the *Short Range Transit Plan Update for Fiscal Years 1992-93 to 2001-02* (July 1992). The route coverage standard require that 85 percent of the residences should be within 1/4 mile of a bus route, and 90 percent of the major activity centers shall be within 1/8 mile of a bus route. At the present time, the geographic coverage standard is being fully met by the transit system. This standard is identical to that used in the 1993 Congestion Management Program for Napa County.

Frequency standards for the VINE call for 60 percent of the routes to operate at half-hour intervals, with the other 40 percent operating at hourly intervals. This standard is being fully met at the present time, since, three of the routes operate at 30-minute headways while the other two operate hourly.

In 1993, the VINE carried a total of 626,913 passengers (Dahlgren 1994).

Napa Valley Transit

The City also operates and benefits from countywide transit known as Napa Valley Transit (NVT). NVT provides inter-city transit service along the SR 29 corridor, from Vallejo (Kaiser Hospital) through Napa to Calistoga. Route 10 is the only route. Service runs along SR 221, Soscol Avenue, and Pearl, Trancas, and Jefferson Streets. NVT also provides regional connections to the Bay Area via coordination with the Vallejo Ferry and BARTlink buses to BART. Service is provided at approximately two-hour intervals,
and 50 cents for senior/disabled. Each additional zone is 50 cents for adults. The entire system is divided into four zones, with zone boundaries at Zinfandel Lane, Dwyer Road, and the SR 29/SR 121 junction south of Napa. In Fiscal Year 1993/1994 (July 1993 through June 1994), the Napa Valley Transit system carried a total of 86,450 passengers, a 20 percent increase above the previous year's total passengers. This increase occurred due to the fact that the Napa Valley Transit is a relatively new service (it was established about three years ago) and people are still discovering that the service exists. As more people learn about the services, ridership levels are expected to increase (Dahlgren 1994).



Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan | Truck.DS4 | 12/98

Figure - TR 2

Truck Routes

North

Truck Route

725' 1/2 Mile 1 Mile 3 Miles

0

Source: City of Napa Public Works Department

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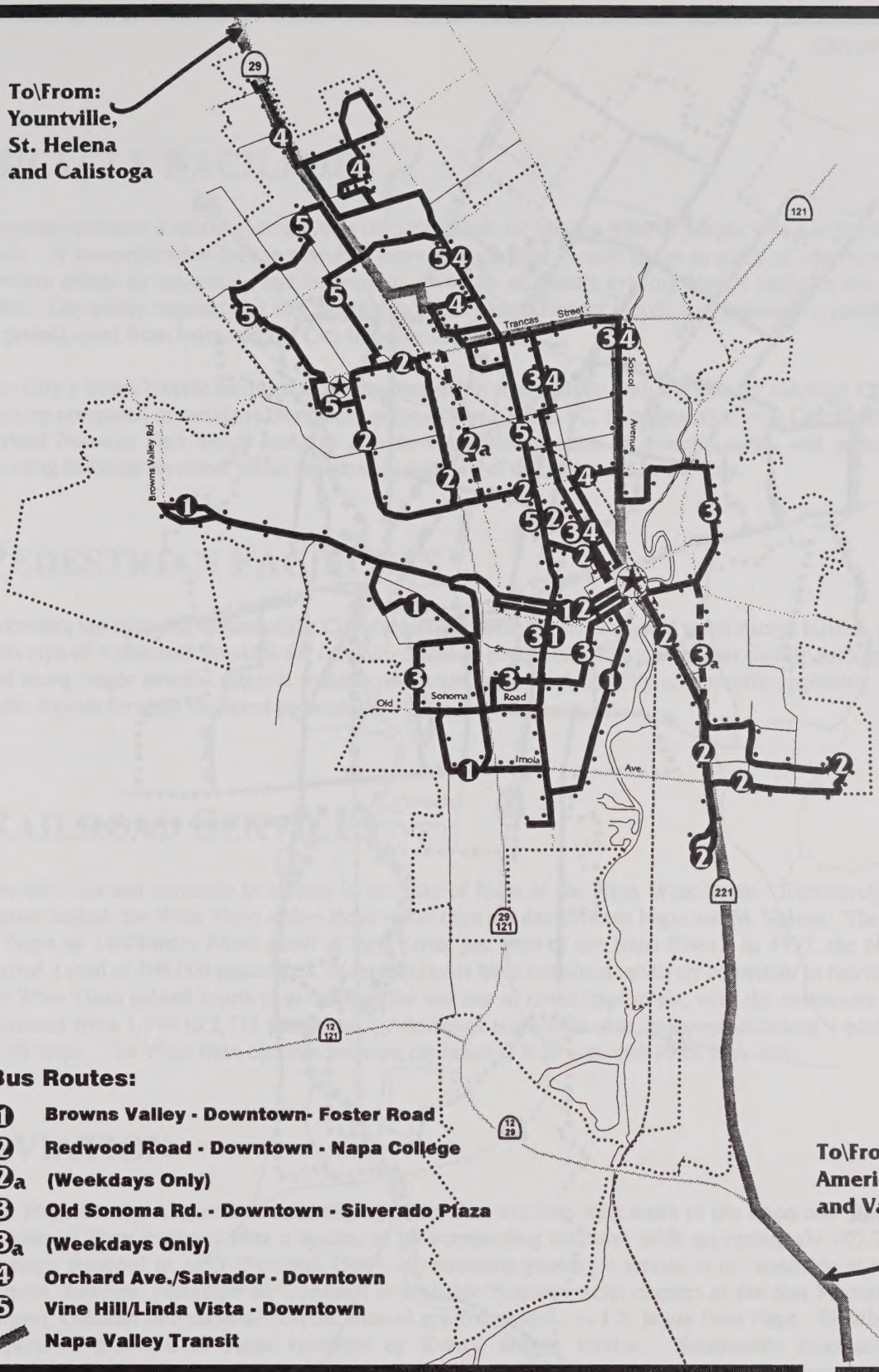

City of Napa General Plan | Transit.DS4 | 12/98

Figure - TR 3

Transit Service Coverage

North

Legend:

Transfer Points

Bus Stops

725' 1/2 Mile 1 Mile 3 Miles

0

Source: City of Napa Public Works Department

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Rural/Urban Limit ••••••••

City of Napa General Plan | Bikesys.DS4 | 12/98

Figure - TR 4

Bikeway System

North

725' 1/2 Mile 1 Mile 3 Miles

0

Class 1

Class 2

Class 3

Source: City of Napa Public Works

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BICYCLE FACILITIES

Bicycles represent a useful alternative to the automobile for shorter trips by people who are physically able to use them. A comprehensive bicycle plan can serve to encourage bicycle usage in place of automobiles, resulting in positive effects on congestion and air quality. The City of Napa's existing bicycle facilities are shown in Figure TR-4. City policy requires that any facility specifically identified for bicycle usage contain a reliable level of safety to protect users from harm and the City from liability.

The City's future bicycle facilities are being planned in coordination with the Bicycle Advisory Committee (BAC), a group composed of members from local cycling clubs. The BAC, in conjunction with City staff, has developed a revised Bikeway Plan which seeks to provide more direct access to schools, parks, and community facilities. Existing facilities represent about one-third to one-half of those planned in the City.

PEDESTRIAN FACILITIES

Sidewalks are included as part of the City's street standards for all classes of street except hillside and rural streets. This type of a standard provides for safe movement of pedestrians in a continuous facility through neighborhoods and along major streets. Signals include pedestrian lights and the City is currently upgrading lights to include audio signals for sight impaired pedestrians.

RAILROAD SERVICES

The only railroad currently in service in the City of Napa is the Napa Wine Train. Exclusively oriented to the tourist market, the Wine Train makes three round trips per day between Napa and St. Helena. The only terminal is in Napa on McKinistry Street north of First Street just west of the Napa River. In 1993, the Napa Wine Train carried a total of 108,000 passengers. Ridership levels have remained relatively consistent in recent years. In 1996, the Wine Train gained approval to increase the number of round trips to six, with the maximum capacity per day increased from 1,176 to 2,712 passengers. Additional stops were also approved including a platform location in north Napa. The Wine train operates between the hours of 8:30 a.m. and 10:00 p.m. daily.

AVIATION

The Napa County Airport is located slightly more than one-half mile south of the Napa city limits. The Airport consists of three runways plus a system of interconnecting taxiways with approximately 203,730 takeoffs and landings recorded in 1993 (Peterson 1994). Commercial passenger service is not available at the Napa County Airport; however, passenger air transport is available by commercial carriers at the San Francisco International Airport, Oakland International Airport, located approximately 1 to 1.5 hours from Napa. Shuttle service to these airports is provided to Napa residents by Evan's airport service. Sacramento International Airport is approximately one hour to the east of Napa and provides a full range of air passenger services as well.

End of Chapter 3

CHAPTER 4
COMMUNITY SERVICES

INTRODUCTION

Napa residents expect clean, safe and aesthetically pleasing neighborhoods, shopping areas and public facilities in their Urban Environment. The basic public services that the City provides account for nearly 75 percent of the City's annual budget, totaling $18 million in general fund commitments for the 94/95 fiscal year. These services are often taken for granted by citizens, until they experience a change or reduction in the delivery.

The Community Services background chapter provides information that supplements and supports the goals policies and implementation measures of the General Plan Policy Document. Topics in this chapter cover the range of services that are provided to the community, primarily by public agencies, including law enforcement, fire protection and emergency medical services, schools, water supply, wastewater collection, storm drain facilities, solid waste services, library facility, and public utilities. Most of these services are directly supplied by the City and others are provided by other entities including the County, State, special districts or public utilities.

LAW ENFORCEMENT

Napa Police Department

The Napa Police Department (NPD) serves Napa's city limits. Four patrol beats, congruent with the northwest, northeast, southwest, and southeast sections of Napa, are each staffed by one or more officers per shift, 24 hours per day, seven days a week. These beats change in response to factors that might affect response times in emergency situations, such as time of year, weather, and traffic condition on the bridges and highways in Napa (State Routes 29 and 121).

The NPD is organized into five divisions of Administration, Patrol, Investigations, Community Crime Prevention, and Information Services; approved staffing levels for 1995 to 1997 are shown in Table CS-1.

The NPD is involved in a county-wide narcotics task force that is staffed by four officers. The NPD's vehicular fleet consists of three unmarked administration cars, 17 marked patrol cars, four marked CSO cars, nine unmarked investigation cars, four unmarked narcotics cars, and one unmarked youth services bureau car (Berg 1994).

Napa's officer/resident ratio is approximately .95 officer per 1,000 residents. This figure is below the officer/resident ratio for cities in the western region of the United States, which is 1.3 officers per 1,000 residents (Department of Justice 1992). This statistic, however, can be misleading because police services are heavily influenced by a community's location, the socioeconomic characteristics, and the types and numbers of calls handled by the police department. Cities with similar demographics and police/resident ratios may have levels of service that are quite different.

Table CS-1 NPD Council Approved Staffing Levels 1995-1997			
	1994/1995	1995/1996	1996/1997
Chief of Police	1	1	1
Deputy Chief	1	1	1
Commander	4	4	4
Communications Manager	1	1	1
Administrative Assistant	1	1	1
Police Records Supervisor	1	1	1
Police Sergeant	9	10	10
Public Safety Dispatch Supervisor	4	4	4
Administrative Secretary	1	1	1
Police Officer	51	56	57
Sr. Identification Technician	1	1	1
Public Safety Dispatcher	19	19	19
Secretary	2	1	1
Senior Police Records Assistant	0	1	1
Crime Prevention Representative	1	1	1
Community Services Officer	7	7	7
Police Records Assistant I/II	6	7	7
Total	**110**	**117**	**118**
Sworn	**66**	**72**	**73**
Non-Sworn	**44**	**45**	**45**

Source: Napa Police Department 7/25/96

Police Response Priorities

The Napa Police Department services go well beyond law enforcement, directly affecting the quality of life in Napa. Typical police calls for service range from assistance in solving social problems to reports of criminal acts. Calls about noisy neighbors, barking dogs, abandoned vehicles, civil and domestic disputes, unruly children, the mentally ill, and the homeless far outnumber actual reports of crimes.

The Napa Police Department handled 69,833 calls for service in 1994. This is a 4% increase over 1993, or almost 3,000 additional calls for service which, combined with reduced resources, results in an increase in response times. A review of response times from 1991 through 1994 shows the impacts of increased workload and reduced resources. **Table CS-2** shows the actual yearly average for response times in the priorities listed. This data comes directly from the computer aided dispatch system (CAD) and indicates the total elapsed time from receipt of call in dispatch to the officer arriving on the scene.

TABLE CS-2
RESPONSE TIME SUMMARY

CALL PRIORITY		1991	1994
1	In progress or just occurred - murder, kidnap, stabbing, shooting	3:24	3:54
2	Holdup alarm, prowler inside, burglary in progress, injury accident, domestic violence	5:14	6:51
3	Prowler seen, gang fight, assault, unknown 911 problem, etc.	8:05	10:20
4	Burglar alarm, minor injury accident, vehicle burglary in progress, prowler noise only, etc.	9:08	12:34
5	Suspicious person, loiterers, traffic hazard, certain report calls	11:25	18:56
6	Speeding vehicle, noisy party, drug activity, juvenile problems, shoplifter in custody	16:02	30:36
7	Most serious crime reports	27:51	1:03:04
8	Most minor crime reports	28:09	1:10:05
9	Subpoena service, parking problems, most minor field service calls	10:48	34:20

Source: Napa Police Department

Service Delivery

In response to this increasing call volume, the NPD has replaced its traditional incident-response style with a problem solving style of delivering services. This approach attempts to address the causes of problems generating calls for service and attempts to deal with them through intervention and education.

The NPD is able to provide a wide array of services within a relatively limited budget through careful management of its resources. The department uses and "Alternative Service Delivery System" which allows for screening, prioritization and assignment of calls based on critical need. This system utilizes the force of Community Service Officers to handle many non-emergency calls, freeing up sworn officers for priority law enforcement functions. Non-emergency incoming calls are categorized according to urgency. Urgent calls are forwarded to the dispatch center, all other calls are handled with various methods of report filing such as mail-in reports of neighborhood disturbances, appointment at with an officer to handle disputes or inspect a minor vehicle break in. This system has reduced the demands on officer calls and time constraints by an estimated 50 percent.

This delivery system has allowed the NPD to maintain service levels in areas of critical need. Priority one calls (threat to life) are considered most important and receive the shortest response time. For example, during 1993-1994, priority one calls had an average (sworn officer) response time of 3:45 minutes whereas priority nine, "cold reports", elicited a community service officer in about 30 minutes.

A major contributor to the balance of service demand is the crime prevention program. Based on their analysis of call volumes, the NPD has recognized that certain calls might be prevented through programs that increase community awareness and participation in solving problems before they become calls for service. The Department is exploring, and when possible is implementing, alternative approaches to providing police services that emphasize community education and involvement. Prevention and early intervention programs, focused

enforcement and resource sharing with City Departments and other agencies are intended to more efficiently direct Police resources to the problems that cause calls for service. Examples of these alternative approaches include DARE, Neighborhood Watch, Cadet and other youth programs, and the Neighborhood Improvement Program. As part of its crime prevention program, the police force includes three officers who specialize in urban and site design. These professionals provide assistance to residents and businesses in making buildings and developments less inviting to criminals.

Police Operation Priorities

Currently, the NPD's operations include the following services to the community (ranked in priority order):

1. **Protection of Life and Property:** As the NPD's primary function, protection of life and property receives the highest priority in allocating resources.

2. **Enforcement of Laws:** The NPD enforces local laws and ordinances and cooperates with state and federal agencies in their enforcement activities.

3. **Investigation of Crimes:** The NPD investigates criminal acts on a priority basis.

4. **Crime Prevention and Public Relations:** A sense of community is the most important and effective deterrent to crime. The NPD has developed proactive programs aimed at deterring, suppressing, and preventing crime through public education and involvement. For example, neighborhood watch programs are successfully strengthening residents' sense of community while they help prevent crime.

5. **General Assistance:** The NPD assists the public in non-criminal matters when no other assistance is readily available. As part of this program, NPD staff are trained to show courtesy, compassion, concern, and interest toward the public at all times.

6. **Public Information:** The NPD is open to public scrutiny and keeps the public informed as to its activities within the guidelines of current law.

Factors Affecting Police Services

There are many factors that contribute to or detract from the NPD's ability to provide adequate service. Many of these factors are beyond local government's ability to control, such as economic conditions, social trends, and national or state wide crime trends. There are, however, several areas in which the city can productively influence the relative safety of residents and visitors through good planning. These factors can be divided into seven general categories:

1. **Traffic Circulation:** Efficient traffic circulation plays a more significant role in crime and quality of life issues than most people recognize. Transportation planning that is sensitive to community standards and expectations can significantly enhance pedestrian and vehicular safety by reducing traffic accidents, speeding and parking complaints.

2. **Environmental Design:** A major factor in crime prevention is environmental design. Building design, landscaping, lighting, and security systems can make areas more resistant to crime and nuisance problems, as well as more conducive to a feeling of neighborhood and community. Mixed use developments help police efforts to deter crime by integrating residents and commercial uses, cutting down on car travel, and keeping residents near commercial uses.

3. **Development Location:** The location of major residential and commercial development is an important factor in delivering the levels of service demanded by the community. As the city grows, infix development will impact police services the least. Cores of activity are easier to police than dispersed areas (i.e. "leapfrog development"). Police services can be most efficiently provided to noncontiguous development only if it is large enough to support its own services.

   While developments that attract visitors and tourists have very little impact on crime levels, high call volume developments (multi-family dwellings and large community commercial centers) located at the outer reaches of the city limits or RUL raise serious concerns over response times and preventive patrol time. These problems become particularly acute when such developments are separated from the central city core by large unpopulated open space areas. An added potential problem with this type of dispersed development pattern is that providing services to these locations may also deprive existing areas of adequate police coverage.

4. **Parks, Trails, and Open Space:** While the use and enjoyment of open space is an important ingredient to the community's vitality, the public must feel safe and secure in these areas in order to take full advantage of the amenities they offer. Continued development of public parks, trails, and open space carry associated costs to keep them accessible and safe.

   When planning for parks and trails within the community, consideration must be given to providing adequate access for police vehicles. If it is not physically possible to provide for typical police access to a recreational area, use of alternative vehicles such as four wheel drives, motorcycles, bicycles or even boats for areas along the Napa River should be explored. In addition to these specialized patrol vehicles, additional personnel may be required to maintain adequate police coverage to both these special areas and the entire community.

5. **Community Facilities:** Like parks, community facilities such as recreation centers, meeting halls, gyms, community centers, and swimming pools are also important to the city's health and vitality. Access to these types of facilities, particularly by youth, is a significant factor in reducing crime.

6. **Housing Density:** There are ethical, moral, and social reasons to encourage a mix of housing types and economic levels within a neighborhood. One reason to promote diversity is the provision of affordable housing, a very important goal for the city of Napa. One way to preserve the affordability of resale and rental housing is to increase the number of units allowed on available parcels. However, care must be given to the design and location of more dense housing developments. A variety of site design factors must be taken into consideration, including the ability of existing streets to handle increased traffic flow, on and off street parking and accessibility of police and emergency services vehicles.

7. **Public vs. Private Developments:** In response to the public's growing fear of crime and government's shrinking resources, a trend has begun towards private, gated communities. Aside from the aesthetic and social implications of these walled private communities within a city, private communities carry certain pros and cons for law enforcement.

   Certainly, they offer a high degree of security for the residents; however, they also create law enforcement problems. While they may reduce crime, they slow down police and medical emergency response times because of limited access (in the case of gated communities), unfamiliar private streets, and unusual or non-existent residential addresses. Traffic, parking, neighborhood disputes, nuisance, and code enforcement calls for service may go unanswered due to inaccessibility and/or the NPD's inability to enforce public laws on private property. Yet residents of these developments expect the same level of service as public areas and are often frustrated and bitter towards the police when they are unable to meet their expectation.

Other Law Enforcement Services

In addition to the City's police department, the urban area is served by the Napa County Sheriff's Office for those areas within the RUL that have not been annexed. The Sheriff's Office, including jail, is located in the downtown complex of County Offices on Third Street and includes civil, coroner, boat patrol and narcotics divisions. The State highways within the City's planning area (State Routes 29 and 121) are under the jurisdiction of the California Highway Patrol. The CHP dispatch center for the region is located within the City limits. These two law enforcement agencies have an unwritten mutual aid understanding with the NPD to assist in responding to incidents as necessary until the agency with jurisdiction has established situation control.

The Napa County District Attorney's office is within the County complex of offices located in Napa's downtown. The DA's office consists of criminal, investigations, consumer affairs, child abduction, public administrator/guardian and family support divisions to serve the community. Napa County Municipal and Superior Court facilities, are also located in the downtown and provide judicial services for the all citizens in Napa County. The County Clerk Recorder and Assessor's offices provide property and personal record services for all of the County citizens and support the legal record related activities of the City.

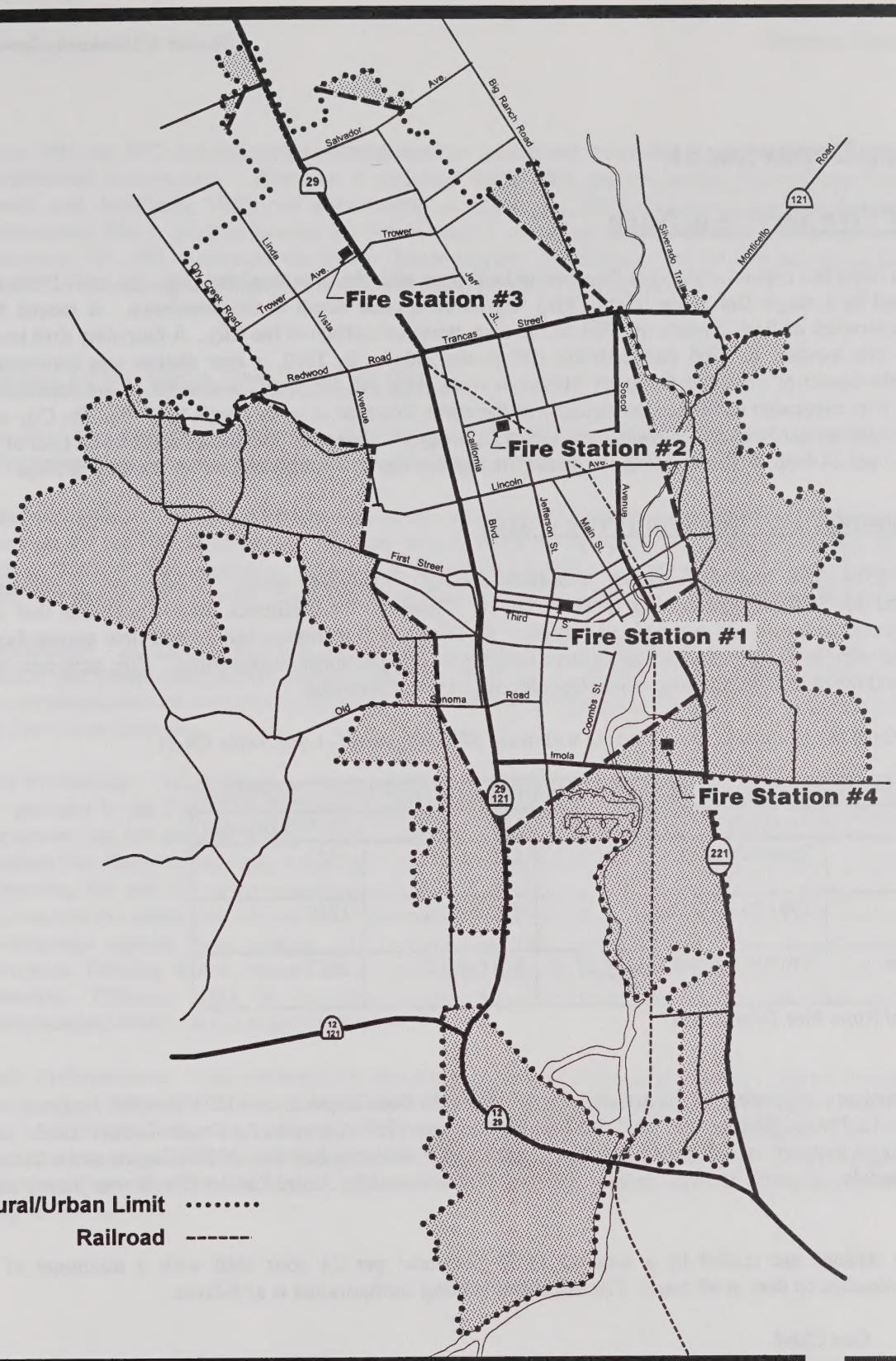
FIRE PROTECTION AND EMERGENCY MEDICAL RESPONSE

Setting

The City of Napa has local climatic, geological, and topographical conditions that affect the Napa Fire Department's (NFD) ability to provide fire and life safety services to the community. The City of Napa is characterized by a narrow valley floor surrounded and intermingled with steep hill terrain, containing areas which are very susceptible to wildland fires. Such fires expose residential and other development within the City to an increased risk of conflagration.

Wind is a predominant factor in the spread of fire in that burning embers are carried with the wind to adjacent exposed areas. Napa has a characteristic southerly wind which originates from the San Francisco Bay and becomes a factor in the control of fires. Further into the dry season, Napa experiences occasional north winds of high velocity which fire officials consider significant in regard to the spread of fire.

The north to south flow of the Napa River and the north/south freeway sections of State Highway 29 geographically divide the City of Napa into three parts. These natural barriers can serve as severe impediments to the delivery of public safety services in Napa during flooding or seismic events.



Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan Firelim.DS4 12/98

Figure - CS 1

Fire Station Locations & 1 1/2 Mile Response Radius

North

Areas Outside of 1 1/2 Mile Response Radius

725' 1/2 Mile 1 Mile 3 Miles

0

Source: City of Napa Fire Department

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Napa Fire Department

History of Fire Service in Napa

Fire service in Napa has expanded through the years to keep pace with the growth of the City. Up until 1950, the City was served by a single fire house (circa 1926) located on Second Street in the downtown. A second fire station was constructed on Park Avenue in 1950, in the then, northern portion of the City. A four story drill tower was added at this location in 1966 and both are still in use today. In 1962, a new station was constructed downtown at the corner of First and Seminary Streets to replace the old fire house and serve as the department headquarters. City expansion continued, particularly to the north; however, it wasn't until 1987, that the City was able to fund a third station located at Trower Avenue and Highway 29. These three stations, staffed by a total of 13 to 15 personnel per 24-hour shift, provide the basis for fire and emergency medical service for the City of Napa.

NFD Personnel, Facilities and Apparatus

As of January 1994, NFD had 46 personnel: 1 operations chief, 3 battalion chiefs, 12 captains, 17 full-time firefighters, and 13 firefighter/paramedics (Perkins 1994). There are 18 firefighter reserve positions that are basically volunteer, with minimal payments for service. In 1990, the Department had 15 full-time paramedics. These positions were gradually changed to require firefighters with paramedic capabilities. Fire personnel are distributed into three divisions; Administration, Operations and Fire Prevention.

The NFD has three fire stations to serve the area within the RUL (Figure CS-1 and Table CS-3).

Table CS-3 CITY OF NAPA FIRE STATIONS

	Location	*Size*	*Yr. Constructed*
Station One	Seminary at First Street	4,169 sq. ft.	1962
Station Two	1501 Park Avenue	5,000 sq. ft.	1950
Station Three	Trower Avenue at Hwy 29	6,200 sq. ft.	1987

Source: City of Napa Fire Department

The NFD's emergency response vehicles are made up of two 1986 Beck Engines, two 1973 Van Pelt Engines, one 1964 American La France Engine, one 1948 Sterling Engine, one 1959 American La France Ladder Truck, and one 1988 Air/Light Support Unit. The NFD also has 1 Office of Emergency Services (OES) Engine and a 25-foot hazardous materials response trailer. In May 1995, a 110' Simon-LTI Aerial Ladder Truck was placed into service.

The three fire stations are staffed by a total of 13-15 personnel per 24 hour shift with a minimum of 4 Firefighter/Paramedics on duty at all times. Fire apparatus staffing configuration is as follows:

Station 1: One Chief
One engine with 2 Firefighters or Firefighter/Paramedics and one Captain
One truck with 2 Firefighters and one Captain

Station 2: One engine with 2 Firefighters or Firefighter/Paramedics and one Captain

Station 3: One engine with 2 Firefighters or Firefighter/Paramedics and one Captain

Since 1991, the NFD has evaluated its service delivery system and found that an additional station is needed in the Imola/Soscol Avenue area. Based on a consultant study (Fire and Paramedic Development Fees; Terrace E. Lowell and Associates, 1993) and after lengthy consideration, the City Council adopted Fire and Paramedic Development Fee to provide funding for Fire Station 4 including acquisition of land, cost of construction and equipment. In 1995, a one acre site on the Gasser property was dedicated to the City as part of the South Napa Marketplace shopping Center project and is potentially the site of Fire Station 4.

Range of Services Provided by NFD

The Napa Fire Department provides a range of services related to fire suppression and emergency response and plays both a responsive and proactive role in serving the community:

Administration: The Administrative Division is primarily responsible for the day-to-day business management functions for the Fire Department. It serves as a resource to the other divisions and provides services such as budget planning, administration, financial and payroll records and reporting, purchasing, inventory control, personnel records and activities, clerical support services, central records and management information.

Operations: The Operations Division maintains a trained staff prepared to respond to a variety of types of fires, medical and rescue emergencies and hazardous condition situations. Operations also conducts routine follow up fire investigations and implements the commercial occupancy inspection program with technical assistance from the Prevention Division.

Fire Prevention: The NFD has a very progressive fire prevention and public education division. These efforts are provided by the Fire Prevention and Code Enforcement Division with one division chief, two captains, three inspectors, one fire prevention technician, two code enforcement people and 1 secretary. This staff enforces the Uniform Fire Code and the Napa Municipal Code. Prevention duties include new development review, construction inspection, fire and life safety inspection and public education. They inspect all permitted occupancies, new construction fire protection, day cares and institutional occupancies. Although Operations follows-up routine fire investigation reports, more complex fire investigations are conducted by Prevention personnel. The Fire Prevention Division is also responsible for permitting, cost recovery, and code inquiries related to hazardous materials. Effective 11/95, the underground tank removal responsibility was turned over to Napa County Environmental Health as a cost saving measure.

Code Enforcement: Code Enforcement also serves a proactive role in addressing problems before they become emergencies. The Code Enforcement division is considered the clearinghouse for the active enforcement of the City's Municipal Code; early enforcement of routine codes can reduce the public's exposure to risk and prevent emergency incidents that require Police and Fire response. The division handles routine complaints and code violations that are not related to an immediate threat to life and oversees the Weed Abatement and Weed Spray Program for the City.

Service Delivery

In 1993, the NFD received a total of 4,776 calls for service, with 3,350 being medical responses. The remaining 1,426 calls were fire-related. In a five-year period from 1988 to 1993, NFD's total number of calls went from 3,956 to 4,776, an approximate 21 percent increase. Most of this is attributable to population growth in the City of Napa. The call volume in 1995 had increased to over 5,510 calls, of which 3,654 calls (66%) were of a medical/rescue nature. Table CS-4 and CS-5 demonstrate the trends in calls and call volume from 1985 to 1995 and demonstrate the type of fire and medical emergency service that department has recently been providing.

The NFD believes that fire protection and emergency medical response (EMS) are considered good within a 1.5-mile radius of each fire station. The NFD strives for a three-minute average response time within these areas. The NFD has established a 5 minute time limit as the maximum amount of time appropriate for a unit response (includes notification, dispatch and driving time). Outside of the 1.5 mile response radius are areas in Browns Valley and southern Napa where response times sometimes approach seven minutes (depending on traffic and the actual location of units). **(Figure CS-1)**

As previously described, NFD operates three fire stations within the city, providing coverage for central, north and northeast Napa. For purposes of emergency response, the city is divided geographically into three north-south quadrants by the Napa River and Highway 29. The location of stations and the topography west of the highway and east of the river contribute to longer response times in portions of those areas. Through streets, a good arterial system, automatic fire sprinklers, fire resistive construction, and reliable water supply could mitigate response time deficiencies in most cases.

Currently, at sites over 300 feet in elevation, the city's water system does not deliver adequate pressure for fire fighting (i.e. 2,000 gallons per minute). This creates problems for future development on hillsides in the city's east and west quadrants. As of 1996, the City of Napa Water Division and the Fire Department are evaluating alternatives for the provision of water for properties above 300 foot elevation. these alternatives range from private water systems designed to specific standards to provide adequate pressure for future development, to developing new public water services (tanks or reservoirs) to provide these properties with adequate water pressure for fire suppression.(See Figure CS-7 in Water Section of this Chapter)

Table CS-4
Napa Fire Department
Emergency Medical Response Calls By Type - 1995

Advanced Life Support	2121
Basic Life Support	1178
Non-Emerg. Referred to MD	276
Refused Medical Treatment	147
Needless	123
Other	57

Source: Napa Fire Department

Table CS-5 **NAPA FIRE DEPARTMENT TOTAL CALLS 1985-1995**

TYPE OF CALL	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Structure	92	111	51	76	66	116	114	113	103	121	107
Grass	89	69	27	69	52	53	66	58	48	64	55
Vehicle	97	98	77	100	102	85	77	81	74	81	63
Other (fires)	84	71	175	161	129	73	104	81	76	73	75
Overpressure/Rupture*1										22	18
Medicals/Rescue*2	2211	2424	2469	2646	2815	3138	3188	3132	3350	3593	3654
Mutual Aid	28	64	48	9	20	16	51	35	42	*3	*3
Hazardous Condition	115	120	178	190	200	245	196	205	238	193	290
Service Call	252	305	206	224	206	375	174	204	250	428	475
Good Intent (Needless)	207	191	206	201	223	272	228	259	304	279	368
False Calls	201	171	236	280	278	276	372	375	262	298	387
Natural Disaster *1											11
Citizen Comp./Investigation*						11	4	5	7	7	6
Rescue*						21	25	20	22	*2	*2
Miscellaneous*						8	1	0	0	1	1
TOTAL	3376	3624	3673	3956	4091	4689	4600	4568	4776	5160	5510

INCREASE IN CALL VOLUME = 63%

*New categories due to State reporting requirements of 1990;
*1 New category due to State reporting requirements of 1994;
*2 Rescue is included in Medical Category for 1994;
*3 Mutual aid calls now categorized under the type of call responded to meet State reporting requirements of 1994 and include: 17 - Calls in which Mutual Aid was received from another fire agency; 12 - Calls in which Mutual Aid was provided to another fire agency.
Source: City of Napa Fire Department

Training

In order to maintain a high quality of service, the NFD conducts ongoing training in all aspects of the departments duties. A training division is made up of fire officers from several divisions. On a monthly and quarterly basis, all companies participated in ongoing drills for medical training, driving, breathing apparatus, company evaluations and hazardous materials. Fire personal are critical participants in planning and conducting the City's OES Disaster Training and in ensuring the effective operations of the City's Emergency Operations Center (EOC). Fire personnel participate in mutual aid drills with surrounding agencies, (County Fire, Other City Fire Departments and CDF). Fire personnel training has expanded to include affirmative action, workplace violence, ergonomics, injury and illness prevention, multiple casualty incident training, and ongoing Emergency Medical Technician training.

ISO Rating

For purposes of providing fire insurance to communities, the Insurance Service Office (ISO) grades a community's fire defenses on a one (excellent) to 10 (poor) scale. ISO evaluates water supply, department operations, fire safety control, and communication. Based on ISO's rating system the city is rated at three. NFD believes acquisition of a new fire truck and phased replacement schedule for its fire fighting apparatus will improve the city's rating even further.

Other Fire Protection Agencies / Mutual Aid

On September 9, 1994 a mutual aid agreement for south Napa County was made by the Napa County Fire Department, the American Canyon Fire Protection District and the City of Napa Fire Department pursuant to the Joint Exercise of Power Act. The three mutual agreement members provide fire protection, emergency medical and hazardous materials response for their own jurisdictions which are:

- **City of Napa Fire Department** - the City of Napa.
- **American Canyon Fire Protection District** - the City of American Canyon and those portions of Napa County that are adjacent or proximate to American Canyon.
- **Napa County Fire Department** - those portions of Napa County which are adjacent or proximate to the areas protected by the cities of Napa and American Canyon.

Mutual Aid Agreement - Purpose

In responding to a local emergency incident, after committing local resources, any of the members may need additional resources for initial attack, major incident strategies or station coverage. Fire-fighting mutual aid is needed to provide the joint powers members augmented response with sufficient resources to address emergency incidents in any of the three mutual aid jurisdictions, and to do so in an organized manner. The most significant provisions of the agreement are:

1. Mutual aid will be provided within the limits of Napa County.

2. Each member will furnish personnel, equipment, materials and supplies and to provide emergency incident response services and station coverage for the other members as necessary.

3. No member will be required to reduce its own resources, personnel services or facilities to the detriment of its normal fire protection and emergency services delivery capability. Mutual Aid Agreement Operational Standards

4. The mutual aid agreement establishes operational standards for the members. These standards include:

5. Staffing levels on mutual aid units (normal for the member providing assistance with a recommended minimum staff of three).

6. Required protective clothing to be worn by mutual aid personnel (structural and wildland fires).

7. Recommended training standards (full-time firefighters, volunteer firefighters and incident commanders on mutual aid units).

8. Requirement to use the Unified Incident Command System for managing mutual aid incidents.

9. Requirement that the St. Helena dispatch will make notification to all agencies when "red flag" burning conditions exist or are predicted.

10. No cost will be charged to a member requesting mutual aid.

11. The mutual aid system will be activated at least twice each year for testing and updating purposes.

Wildland Response from the California Department of Forestry

The three members of the mutual aid agreement may request a wildland response from the California Department of Forestry (CDF) provided that:

a. Ground resources (engines, dozers, fire crews) may be requested only for specific needs.

b. Air resources (air attack, air tanker, helicopter) may be requested for a specific need; costs waived only if CDF declares a threat to a State Responsibility Area.

SCHOOLS

Public education is not only a right, it is a requirement in today's society. Napans expect their schools to provide quality educational services to their children, as well as a plethora of community service programs to enrich the lives of young and old alike. Like the city and county, the Napa Valley Unified Schools District (NVUSD) is currently faced with attempting to maintain and improve, the services it provides the community on a budget that has not increased commensurate with the demands placed on it. Over the past decade, the Bay Area has experienced nearly a 20 percent increase in children 0 to 9 years of age. This rapid increase has been due to both national demographic trends and the Bay Area's high minority group birth rates. Coupled with a steady increase in single parent and dual income families, a large percentage of preschool and elementary school children are now in group care situations for all or part of their day. Today, about half of the Bay Area's working families are able to arrange child care through their families or neighbors. The other half must compete for scarce, and frequently expensive, child care resources offered in their community. Lack of age appropriate facilities and programs can force families to rely on a patchwork of friends, baby-sitters, unlicensed care, and even leaving young children home alone, during the hours parents are working.

Napa Valley Unified School District (NVUSD)

The Napa Valley Unified School District (NVUSD) was created in 1965 with the unification of 12 elementary districts and one high school district. NVUSD currently has 21 elementary schools (13 in the City of Napa), two middle schools, two senior high schools, and a continuation high school. Today, NVUSD provides educational services to the majority of school aged children in Napa as well as an extensive adult education program. Figure CS-2 shows the locations of public and private schools in Napa.

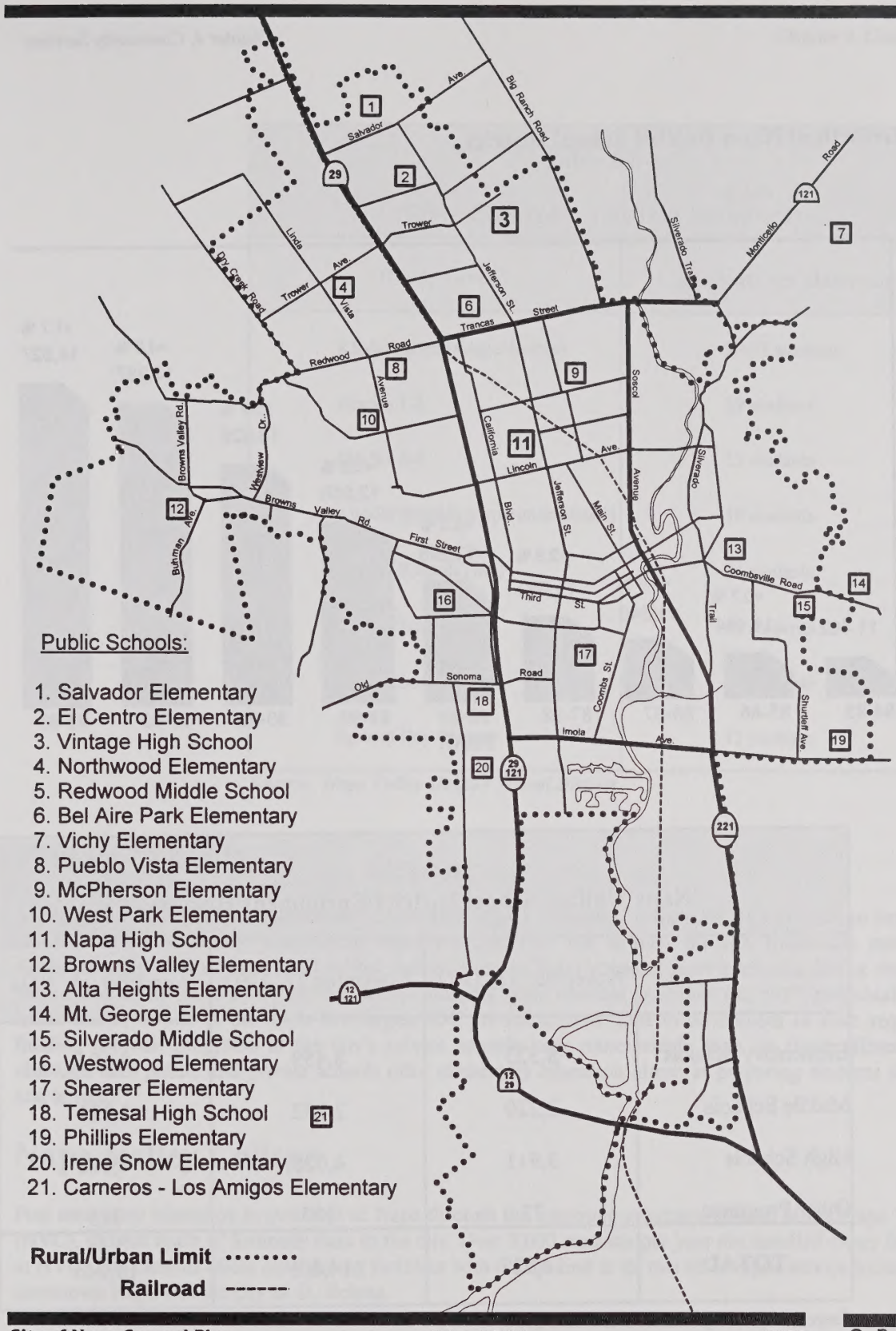
NVUSD Enrollment

After unification, District K-12 enrollment grew to over 15,000 in the early 1970s. During the late 1970s and early 1980s enrollment declined and forced closure of three elementary schools and a junior high school. Enrollment trends reversed during the last decade, increasing by 32 percent between 1984 and 1994 to nearly 15,000 for the 1994/95 school year. Enrollment at NVUSD for the last decade has grown from 11,402 in 1984-85 to 15,045 in 1994-95, representing a 32 percent increase (Figure CS-3 and Table CS-6). School capacities are based on State classroom loading standards for various programs and grade levels. State loading standards are presented in Table CS-7.

NVUSD Facilities

In December 1990, the Board of Education appointed 28 community members to serve on a Facilities Task Force. The Facilities Task Force was asked to examine the need to modernize existing facilities and plan for new facilities to accommodate projected student growth to the year 2005. The Facilities Task Force concluded that many district facilities require reconstruction to meet basic health and safety needs. Existing facilities also need modernization essential to the technological demands of teaching strategies in the 1990s and beyond. A local General Obligation bond election (March 1993) failed with a 58% yes vote (2/3 approval needed) (Dencavage 1994). The bond was submitted to the voters again and passed in 1996. In order to provide the ongoing facilities needs, enrollments have been accommodated by the addition of relocatable classrooms to various schools in the District.

As shown in Table CS-8a, most district schools are at capacity. Thirteen schools are using 41 relocatable classrooms over 20 years old. The District plans to replace these units when funding becomes available.
Enrollment projections are based on complex variables that affect schools district wide. New development may generate additional demand on school facilities. The increased demand for facilities would likely be addressed by a combination of relocatables, permanent structures (such as a new school), and use of currently loaded facilities (Dencavage 1994).



City of Napa General Plan School.DS4 12/98

Figure - CS 2

Existing Schools

North

Existing School

725' 1/2 Mile 1 Mile 3 Miles

0

Source: City of Napa Planning Department

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Figure CS-3
Enrollment Growth at Napa Unified School District

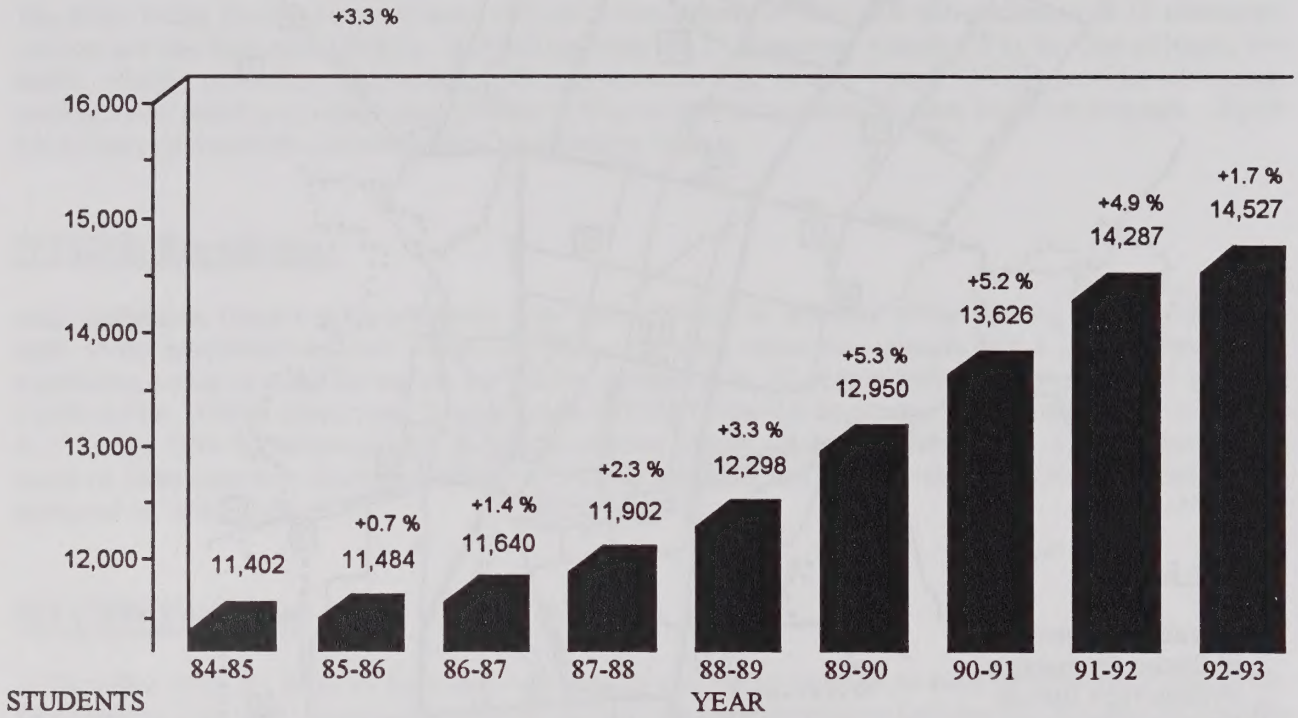


Table CS-6 Napa Unified School District Enrollment History			
	November 13, 1992	November 12, 1993	November 11, 1994
Elementary Schools	8,323	8,459	8,504
Middle Schools	2,220	2,282	2,328
High Schools	3,911	4,028	4,098
Other Programs	73	100	115
TOTAL	14,527	14,869	15,045

Source: Napa Unified School District, 1994.

Table CS-7 State Classroom Loading Standards	
Grade Level	**Students per classroom**
Kindergarten (single/double)	29/55 students
Grades 1-3	29 students
Grades 4-6	33 students
Middle Schools (departmentalized)	30 students
Middle Schools (lab)	26 students
High School	28 students
High School (lab)	24 students
Special Day Classes	12 students

Source: Napa Valley Unified School District

Private Schools

Along with NVUSD's three alternative elementary school programs, private schools provide an important option for families with specific educational objectives that may not be met through traditional public education. Approximately 12.6 percent of all school age children in Napa attended private schools during the 93/94 school year. Most of the over 2,000 private school students were enrolled in either the city's parochial High School, Justin-Siena, or one of the city's five largest K-8 private schools. Due to differences in state requirements and funding sources, programs at the city's private schools vary more widely than do those offered by NVUSD, although both public and private schools offer elementary education aimed at preparing students for high school and beyond.

Napa Valley College

Post secondary education is available in Napa through the extensive programs offered at the Napa Valley College (NVC), located north of Kennedy Park in the city. Over 9,000 students per year are enrolled either full or part time at NVC. The campus offers outstanding facilities both on site and at its two off campus service locations located in downtown Napa and the city of St. Helena.

Established in 1942, NVC's programs have become an important part of the area's cultural and economic development activities. NVC programs include continuing education, core curriculums preparing students for transfer to a four year college or university, associate degree (two year) curriculums, career and vocational education (which includes a job training and placement center), and a variety of community enrichment classes. The college has enjoyed widespread recognition for its integrated approach to learning, and continues to expand its gamut of services offered to the Napa community.

Table CS-8

NAPA UNIFIED SCHOOL DISTRICT
Capacities and Enrollment

	Existing Classroom Capacity*	1994-95 Third Month Enrollment
ELEMENTARY SCHOOLS		
Alta Heights	554	558
Bel Aire	574	565
Browns Valley	645	657
Capell Valley	91	93
Carneros	153	133
Donaldson Way	351	432
El Centro	351	306
McPherson	488	567
Mt. George	215	254
Napa Junction	323	492
Northwood	554	622
Phillips	463	484
Pueblo Vista	598	560
Salvador	256	199
Shearer	752	769
Snow	397	326
Vichy	442	402
West Park	227	301
Westwood	607	575
Wooden Valley	29	21
Yountville	182	188
SUBTOTAL	**8,252**	**8,504**
MIDDLE SCHOOLS		
Redwood Middle	1,300	1,168
Silverado Middle	1,134	1,160
SUBTOTAL	**2,434**	**2,328**

Table CS-8 - NVUSD Capacities and Enrollment -- continued

	Existing Classroom Capacity*	1994-95 Third Month Enrollment
HIGH SCHOOLS		
Napa High School	2,140	1,982
Vintage High School	2,080	1,963
Temescal	132	137
Community College	n/a	16
SUBTOTAL	4,352	4,098
OTHER PROGRAMS	n/a	115
GRAND TOTAL	**15,038**	**15,045**

Source: 1994-95 Budget, Napa Valley Unified School District.

* Facilities for libraries, teacher's workrooms and relocatables over 20 years old are not included in capacity determination. Music, Gifted and Talented Education, Chapter I, child care, Latchkey, Healthy Start, and Opportunity programs are also not included in capacity determination.

Additional Notes:

- 441 students were enrolled in both a local high school and Napa Valley College in Spring 1997
- 298 students that graduated from a local high school went on to attend Napa Valley College in 1996

Table CS-9

NAPA VALLEY COLLEGE ENROLLMENT TRENDS 1990 TO 1996

Semester/Year	Students	% Change
Fall 1990	6,991	--
Spring 1991	7,062	1.0
Fall 1991	7,328	3.8
Spring 1992	7,243	- 1.2
Fall 1992	7,102	- 1.9
Spring 1993	6,319	-11.0
Fall 1993	6,248	- 1.1
Spring 1994	6,264	0.3
Fall 1994	5,932	- 5.3
Spring 1995	6,074	2.4
Fall 1995	5,669	- 6.7
Spring 1996	6,104	7.7
Fall 1996	5,767	-5.5

Source: Napa Valley College 4/30/97

WATER SUPPLY AND DISTRIBUTION

City of Napa Water Division

The City of Napa provides water to the majority of users in the lower Napa Valley. Water service is currently provided to 21,800 active connections which lie within the Rural Urban Limit, both within the city limits and in unincorporated areas within the Rural Urban Limit. The RUL is the urban planning boundary for the City and is the defined service area for the purpose of estimating water demand. The city limits cover about 95% of the RUL, the remainder is unincorporated areas of the County. Water is also served outside the RUL to customers in Congress Valley, the Silverado Country Club community, and users along the Montecello Road and the Conn Transmission Main. The largest water service area outside the RUL is the Vichy/Silverado Country Club area.

The City of Napa completed a draft of the Water System Optimization and Master Plan in January/February 1996 and is preparing an EIR for the Plan. Adoption is anticipated in late 1996. The purpose of the master planning effort was to: 1) inventory and develop a comprehensive reference document of the existing City water facilities; 2) confirm present water demand and project future demand based on the General Plan land use plan; 3) evaluate the ability of existing City facilities and water supplies to meet the current and projected demands and identify needed improvements to correct existing and projected deficiencies; 4) plan to optimize the operation of water supply and treatment facilities and minimize operations cost; and, 5) conduct evaluation of water rates, fees and finances and prepare recommendations for revisions to support the costs of needed facilities improvements.

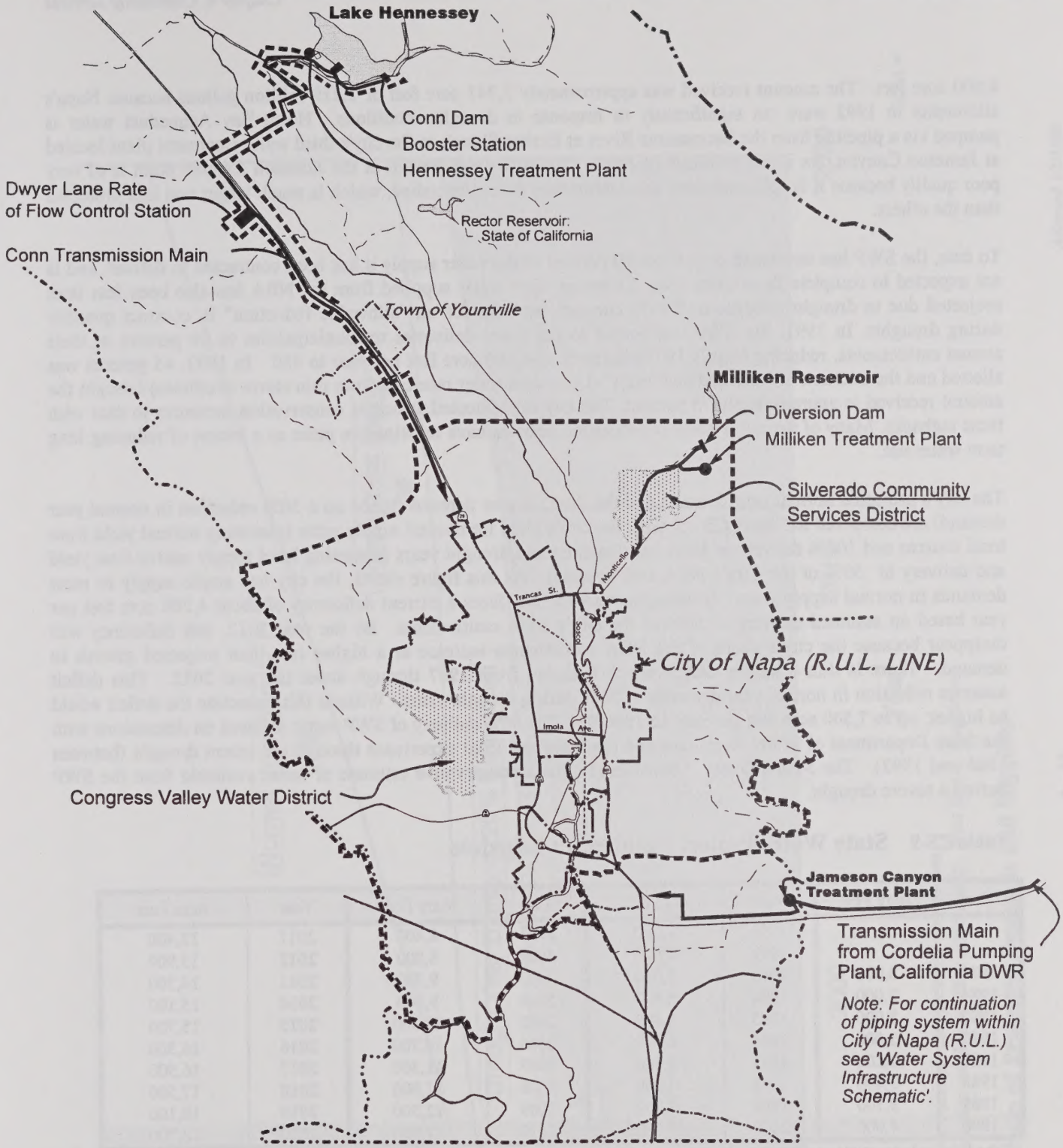
Water Sources

Napa's current water demands are met by three sources: Lake Hennessey, Milliken Reservoir, and water purchased under contract from the North Bay Aqueduct (NBA) system. **(Figure CS-4)**

Lake Hennessey: Lake Hennessey is located behind Conn Dam in the hills east of Rutherford and has historically supplied the largest share of Napa's municipal water. It is a 31,000 acre-foot (10,101.35 million gallons) municipal water supply reservoir built in 1946. Lake Hennessey has an annual safe yield of approximately 5,000 acre-feet (1,629.25 million gallons) taking into account downstream water requirements. It is filled by runoff, and provides relatively good quality raw water. Lake Hennessey has its own water treatment plant with a 20 million gallon per day capacity, which provides complete conventional treatment. The plant is connected to the city by a 20 mile long, 36 inch diameter steel pipeline that generally follows State Route 29 south to the City of Napa.

Milliken Reservoir: Milliken Reservoir was created in 1923 by damming Milliken Creek. It has a capacity of 1,980 acre-feet (645.18 million gallons) with a dependable yield of 1,200 acre-feet (391.02 million gallons) taking into account entitlements of downstream users. Milliken's relatively small watershed surrounded by steep, rocky terrain results in raw water quality that is the highest of the city's three sources, requiring only a direct filtration process prior to transmission. The Milliken Water Treatment Plant is located approximately two miles downstream of the reservoir, and is connected to the city by a three mile long, 14 inch diameter steel transmission line that enters the City generally following the route of Montecello Road.

The North Bay Acqueduct (NBA): The NBA system delivers water to Napa from the State Water Project. This water is predominantly from the Sacramento River but also includes water from Lindsey and Cache sloughs and local runoff from Barker Slough. The State Water Project (SWP) has contracted with the city to deliver an increasing supply of water over time to a cap of 18,800 acre feet in 2021 (Table CS-9, State Water Project Entitlement Schedule). Napa's 1992 scheduled NBA allotment was approximately 1,498.91 million gallons, or



City of Napa General Plan | Watersev.DS4 | 12/98

Figure - CS 4

Water Service Area & Supply Sources

North

Service Area Boundary

Napa County Line

2640' 1 1/2 Mile 3 Mile 9 Miles

0

Source: City of Napa Public Works Department

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4,600 acre feet. The amount received was approximately 3,741 acre feet or 1,219 million gallons because Napa's allotments in 1992 were cut significantly in response to drought conditions. North Bay Acqueduct water is pumped via a pipeline from the Sacramento River at Barker Slough to the city's third water treatment plant located at Jameson Canyon, six miles southeast of Napa. The raw water treated at the Jameson Canyon plant is of very poor quality because it is collected from the Sacramento River watershed, which is much larger and less protected than the others.

To date, the SWP has developed only about 70 percent of the water supply it has been contracted to deliver, and is not expected to complete its original plan. In recent years water supplied from the NBA has also been less than projected due to drought conditions. SWP's contract provides for an "allowable reduction" in contract quantity during droughts. In 1991, the SWP was forced to cut water deliveries to municipalities to 20 percent of their annual entitlements, reducing Napa's 1991 allotment of 4,300 acre feet per year to 680. In 1992, 45 percent was allotted and the addition of "unscheduled water" (i.e. excess water resulting from rain storm overflows) brought the amount received to approximately 75 percent. The city implemented stringent conservation measures to deal with these cutbacks. Many of the city's water conservation policies have remained in place as a means of reducing long term water use.

The city's projected normal year demand and the drought year demand (based on a 20% reduction in normal year demand) are compared in Figure CS - 5 with the city's yield for normal supply years (assuming normal yield from local sources and 100% delivery of NBA entitlements) and drought years (assuming local supply source firm yield and delivery of 50% of the City's NBA entitlements). As this figure shows, the city has ample supply to meet demands in normal supply years. In drought years the city faces a current deficiency of about 4,200 acre feet per year based on assumed delivery of 50% of the city's NBA entitlements. By the year 2012, this deficiency will disappear because the city's share of the NBA entitlements increase at a higher rate than projected growth in demand. There is thus a supply deficit which stretches from 1997 through about the year 2012. This deficit assumes reduction in normal year demands of 20% during drought years. Without this reduction the deficit would be higher; up to 7,500 acre feet per year in 1996/97. The 50% delivery of SWP water is based on discussions with the State Department of Water Resources and the State and local experience through the recent drought (between 1986 and 1992). The 50% delivery is considered to be a conservative estimate of water available from the SWP during a severe drought.

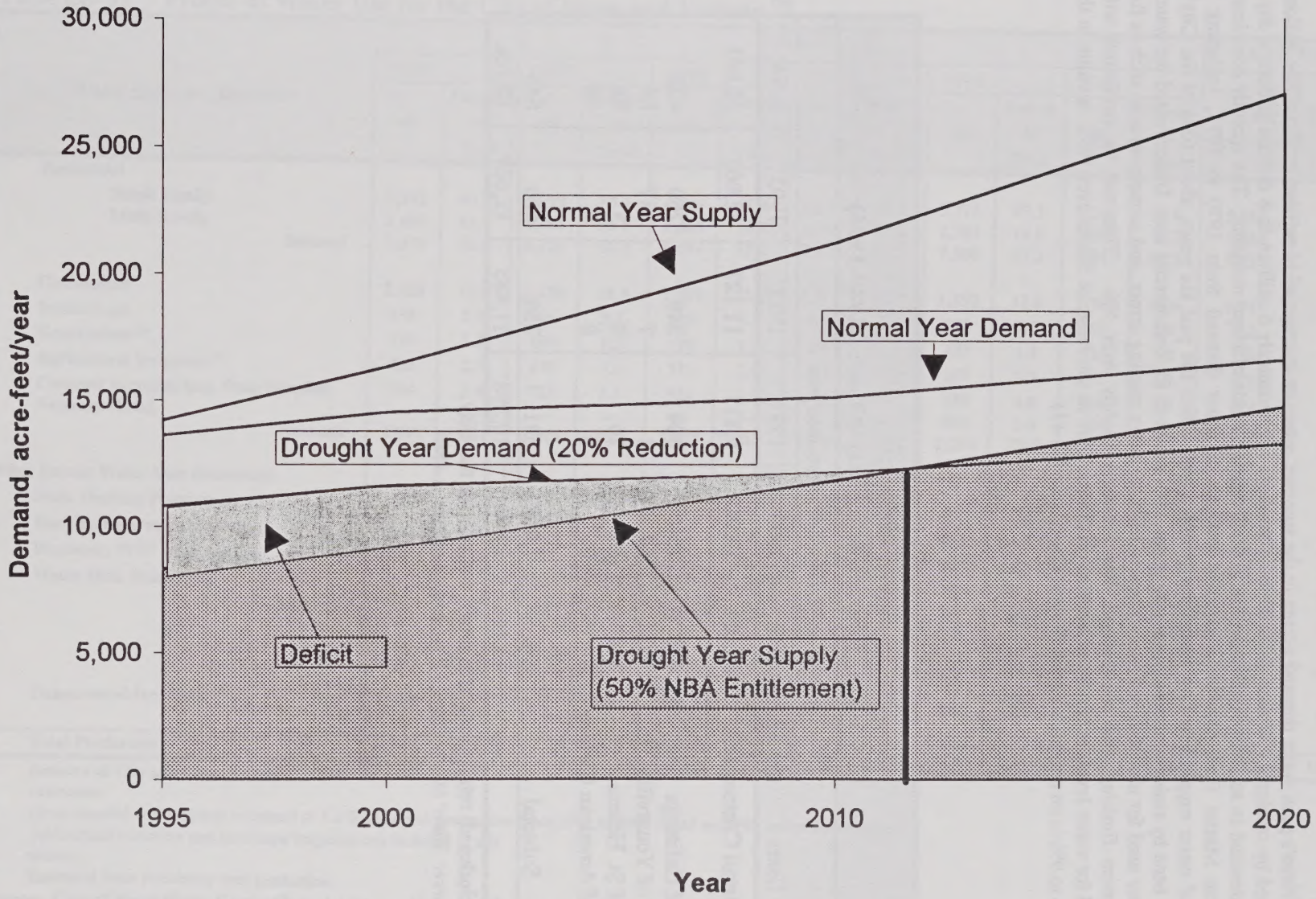
Table CS-9 State Water Project Entitlement Schedule

Year	Acre Feet	Year	Acre Feet	Year	Acre Feet	Year	Acre Feet
		1991	4,300	2001	8,400	2011	13,400
		1992	4,600	2002	8,800	2012	13,900
1983	3,000	1993	5,000	2003	9,300	2013	14,500
1984	3,000	1994	5,400	2004	9,800	2014	15,100
1985	3,000	1995	5,800	2005	10,300	2015	15,700
1986	3,000	1996	6,200	2006	10,700	2016	16,300
1987	3,200	1997	6,600	2007	11,300	2017	16,900
1988	3,400	1998	7,000	2008	11,800	2018	17,500
1989	3,700	1999	7,400	2009	12,300	2019	18,100
1990	4,000	2000	7,900	2010	12,800	2020	18,700

Schedule includes 2021 at 18,800 and continues each succeeding year thereafter for the term of the contract as the maximum entitlement.

1 Acre Foot = 325,851 Gallons

Source: City of Napa Public Works Department - Water Division



NBA =

North Bay Acqueduct. Figure considers data for entire service area.
Source: Water System Optimization and Master Plan (1996 Draft). West Yost & Associates

Figure CS- 5 Comparison of Projected Demands and Supplies

Demand

The City of Napa's peak water demand occurs in the summer, when an average of 14 million to 20 million gallons a day are used by residents. Winter water demand averages approximately 6 million to 8 million gallons a day. The higher demand in summer is partially due to the irrigation needs of Napa residents. The recently completed Water System Master Plan provides a detailed analysis of water demand from 1970 to 1994, including a breakdown of water supplied to City customers by user types. Over the past six years, about 62% of the City's demand has been by residential customers, and about 15% has been for commercial use. Unaccounted for water, which is water used for unauthorized uses, losses to leakage, meter reading errors, and unmetered uses such as fire fighting, system flushing and construction, has averaged slightly over 5%. This can be compared with unaccounted for water levels experienced industry wide which are in the range of 5% to over 10%. a value in the range of 5% to 9% is an acceptable level (Tables CS-10 and CS-11).

Table CS-10
City Water Production by Major Users (1989-1994)

Water Users	Water Production, acre-feet/year					
	1989	1990	1991	1992	1993	1994
City Retail Customers	13,058	12,983	9,817	11,127	12,067	12,061
City of Calistoga	438	751	504	349	260	428
Town of Yountville	102	14	1	7	337	66
City of St. Helena	348	303	76	0	3	81
City of American Canyon	0	0	0	0	0	70
Subtotal	888	1,068	581	356	600	645
Total	13,946	14,051	10,398	11,483	12,667	12,706

[a] Includes all retail customers inside and outside the City.
Source: Water Master Plan – West Yost Associates – 1996

Table CS- 11 Profile of Water Use for the City of Napa and Vicinity [1]

Water Service Categories	Year												Entire Period	
	1989		1990		1991		1992		1993		1994			
	afa	Percent of Total	afa	Percent of Total	afa	Percent of Total	afa	Percent of Total	afa	Percent of Total	afa	Percent of Total	6-Year Average afa	Percent of Total
Residential														
Single Family	5,793	44.4	6,153	47.4	4,789	48.8	5,348	48.1	5,713	47.3	6,145	50.9	5,657	47.7
Multi-Family	1,886	14.4	1,963	15.1	1,645	16.8	1,800	16.2	1,787	14.8	2,202	18.3	1,881	15.9
Subtotal	7,679	58.8	8,116	62.5	6,434	65.5	7,148	64.2	7,500	62.2	8,347	69.2	7,537	63.6
Commercial	2,028	15.5	2,130	16.4	1,494	15.2	1,518	13.6	1,550	12.8	1,762	14.6	1,747	14.7
Institutional	648	5.0	416	3.2	520	5.3	404	3.6	195	1.6	295	2.4	413	3.5
Government [2]	170	1.3	169	1.3	128	1.3	145	1.3	157	1.3	215	1.8	164	1.4
Agricultural Irrigation [3]	382	2.9	473	3.6	271	2.8	271	2.4	397	3.3	441	3.7	373	3.1
Contract Accounts (e.g. State Hospital)	704	5.4	725	5.6	584	5.9	606	5.4	589	4.9	568	4.7	629	5.3
Veterans Home	—	—	—	—	—	—	—	—	406	3.4	0	0	68	0.6
Subtotal	3,932	30.1	3,913	30.1	2,997	30.5	2,944	26.5	3,294	27.3	3,281	27.2	3,394	28.6
Other Known Water Uses (estimated)														
Main Flushing Program	—	—	—	—	—	—	—	—	92	0.8	0	0	15	0.1
Eastside Reservoir Draining	77	0.6	77	0.6	77	0.8	77	0.7	153	1.3	37	0.3	83	0.7
Hennessey WTP Backwashing	167	1.3	76	0.6	51	0.5	284	2.6	305	2.5	236	2.0	187	1.6
Water Main Break	—	—	—	—	—	—	9	0.1	31	0.3	0	0	7	0.1
Subtotal	244	1.9	153	1.2	128	1.3	370	3.3	581	4.8	273	2.3	292	2.5
Total	11,855	90.8	12,182	93.8	9,559	97.4	10,462	94.0	11,375	94.3	11,901	98.7	11,222	94.7
Unaccounted-for-Water [4]	1,203	9.2	801	6.2	258	2.6	665	6.0	692	5.7	160	1.3	630	5.3
Total Production	13,058	100.0	12,983	100.0	9,817	100.0	11,127	100.0	12,067	100.0	12,061	100.0	11,852	100.0

(1) Includes all City and County retail customers.

(2) Governmental consumption estimated at 1.3% of annual production from 1989 to 1992 based on 1993 record information

(3) Agricultural contracts and landscape irrigation are included in this number.

(4) Estimated from remaining total production

Source: City of Napa Water System Optimization and Master Plan (Draft 1996) -- West Yost & Associates

Water Treatment

As previously described, three water treatment plants, Hennessey, Milliken, and Jameson Canyon, are used by Napa in treating raw water **(Figure CS-6).** The Milliken treatment plant, the smallest of the three facilities with a design capacity of 5.5 million gallons per day, employs a direct filtration process. The water entering the Milliken facility is the cleanest raw water in Napa's system. The Hennessey treatment plant began operating in 1981 and is rated at 20 million gallons per day. It is the second largest of Napa's water treatment facilities and provides complete conventional treatment. The biggest of these plants is the Jameson Canyon treatment plant, which treats water from the NBA using a conventional treatment process. Raw water treated at the Jameson Canyon plant is of very poor quality because it is collected from a much larger watershed than the other two facilities (Peterson 1994). In 1988 its nominal capacity was increased from 8 million gallons per day to 12 million gallons per day, although it can treat up to 15 million gallons per day on a short-term basis. The Eastside Reservoir Rechlorination Station consists of two gas chlorinators used to chlorinate influent and effluent to the reservoir. These chlorinators are used for the sole purpose of reducing the risk of disease and algae growth in the reservoir (Peterson 1994).

Water Distribution

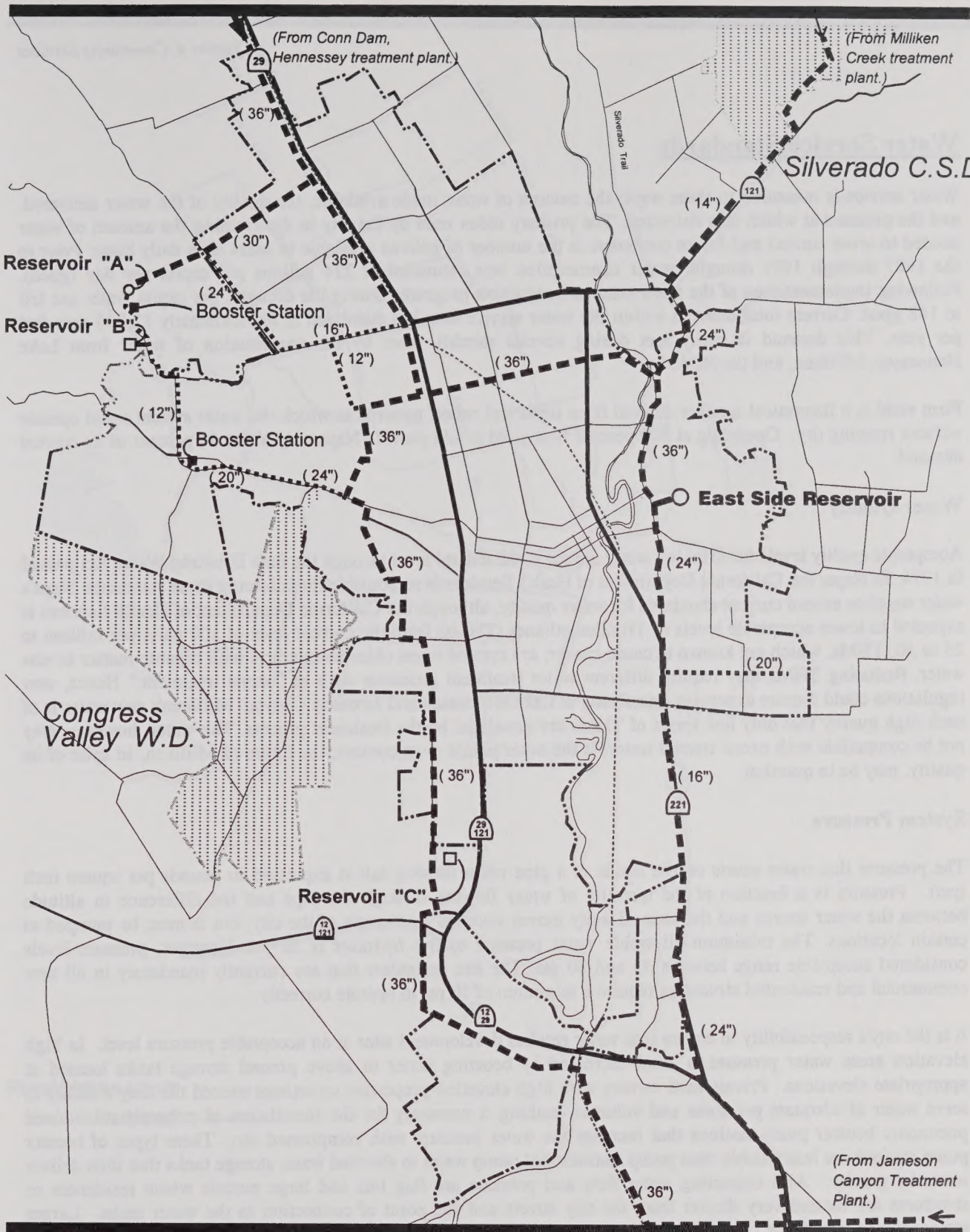
The City distribution system has five distinct pressure zones and several independent zones. There are currently nine booster pumping stations which serve these zones, and 13 pressure regulating stations which control the flow of water between the zones. the distribution system includes about 250 miles of pipelines, seven storage tanks, one fire protection tank, two pressure tanks and the Eastside Reservoir. This open reservoir is not longer used by the City to store treated water because of public health restrictions on its use. The City currently has 7.1 million gallons of usable distribution system storage, not including the treatment plant clearwells or Eastside Reservoir.

The City has interconnections with the Veteran's Home in Yountville, and the towns of Yountville, St. Helena and Calistoga; and, an emergency intertie with American Canyon. The City regularly provides treated water to Calistoga and Yountville by treating their NBA entitlements at the Jameson plant and providing treated water to them through metered connections on the main transmission line up valley. Treated water is also occasionally provided to St. Helena and the Veterans Home during periods of deficiency in their local supplies (Figure CS-6). In emergency situations (drought, earthquake, etc.), Napa has contracted with the Solano County Water Agency for water supplies. This water would be delivered through the NBA system (Peterson 1994).

Water Storage

Based on the recently completed Water System Optimization and Master Plan, the City of Napa's Water Division considers its distribution system as having insufficient short and long-term storage capacity. Short and long term tank storage within the distribution system is one of the primary needs identified in the Water System Optimization and Master Plan.

As with demand, the Water Master Plan provides analysis of water tank storage requirements for each distribution system pressure zone based on the projected land use of the General Plan. The analysis determined that the City is presently about 10 million gallons short in tank storage, and will be about 17 million gallons short by the year 2020. Recommendations for sizing, phasing and locating storage tanks throughout the system were developed and are included in the CIP, along with the timing and cost of a detailed predesign study to confirm these preliminary recommendations.



City of Napa General Plan | Watersys.DS4 | 12/98

Figure - CS 6

Water System Infrastructure Schematic

North

725' 1/2 Mile 1 Mile 3 Miles

0

PIPING LEGEND:

Transmission Lines - (36")

Major Distribution Lines - (16")

Source: City of Napa Public Works Department

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Water Service Standards

Water service is measured in three ways: the amount of water made available, the quality of the water delivered, and the pressure at which it is delivered. The primary index used by the city in determining the amount of water needed to serve current and future customers is the number of gallons available to users on a daily basis. Prior to the 1987 through 1992 drought, water consumption was estimated at 224 gallons per capita per day (gpcd). Following implementation of the city's water use reduction programs during the drought, per capita water use fell to 188 gpcd. Current total demand within the water service area has stabilized at approximately 12,000 acre feet per year. This demand is easily met during normal rainfall years by the combination of water from Lake Hennessey, Milliken, and the NBA.

Firm yield is a theoretical number derived from historical runoff patterns at which the water system could operate without running dry. Operating at 100 percent firm yield would provide Napa only about 60 percent of its current demand.

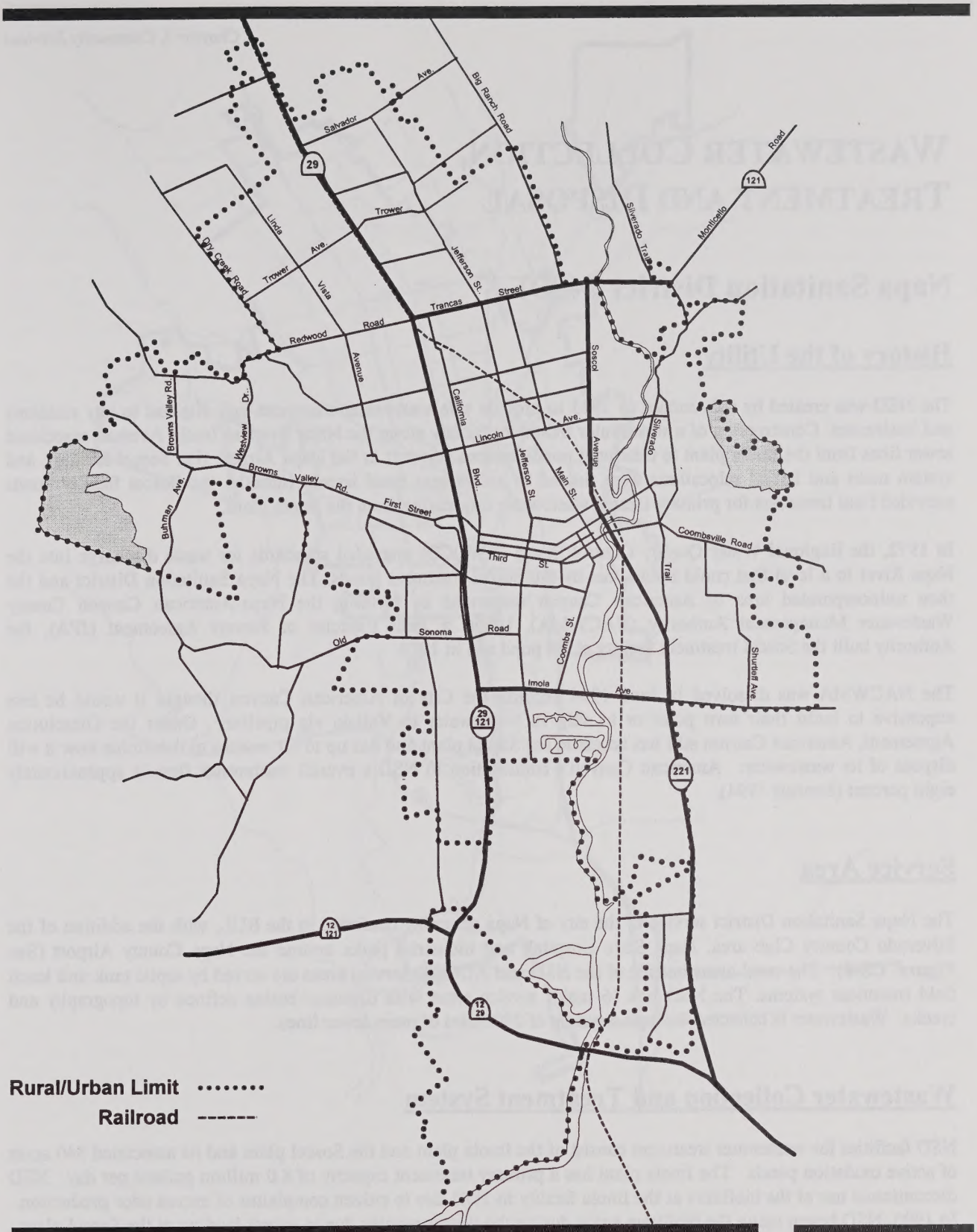
Water Quality

Acceptable quality levels for drinking water are set at the federal level through the Safe Drinking Water Act passed in 1974. In Napa, the California Department of Health Services is responsible for enforcing these standards. Napa's water supplies exceed current standards for water quality, although the California Department of Health Services is expected to lower acceptable levels of Trihalomethanes (THMs) from the current level of 100 parts per million to 25 or 50. THMs, which are known to cause cancer, are created when chlorine interacts with organic matter in raw water. Reducing THMs may require different water treatment processes such as "ozone treatment." Hence, new regulations could require expensive retrofitting at Lake Hennessey and Jameson Canyon. Milliken's raw water is of such high quality that only low levels of THMs are generated by the treatment process. The water, however, may not be compatible with ozone treated water. If the other plants must convert, the future of Milliken, in spite of its quality, may be in question.

System Pressure

The pressure that water exerts on the inside of a pipe when flowing full is expressed in pounds per square inch (psi). Pressure is a function of the quantity of water flowing through the pipe and the difference in altitude between the water source and the user. Gravity moves water to most parts of the city, but it must be pumped to certain locations. The minimum allowable water pressure to fire hydrants is 20 psi. However, pressure levels considered acceptable range between 35 and 80 psi. The fire sprinklers that are currently mandatory in all new commercial and residential structures require a minimum of 50 psi to operate correctly.

It is the city's responsibility to ensure that water reaches development sites at an acceptable pressure level. In high elevation areas water pressure is often increased by boosting water to above ground storage tanks located at appropriate elevations. Private land owners with high elevation properties sometimes exceed the City's ability to serve water at adequate pressures and volumes, making it necessary for the installation of privately maintained pneumatic booster pump stations that increase the water pressure with compressed air. These types of booster pump stations are less reliable than pump stations that pump water to elevated water storage tanks that then deliver water by gravity. Also impacting water flow and pressure are flag lots and large parcels where residences or structures are located very distant from the city streets and the point of connection to the water main. Larger service lines between the city's water main and the residence is needed in these situations to avoid significant water flow and pressure loss.



City of Napa General Plan

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12/98

Figure - CS 7

Areas of Reduced Water Pressure

North

Areas of Reduced Water Pressure Above 300 foot Elevation

725' 1/2 Mile 1 Mile 3 Miles

0

Source: City of Napa Public Works Department

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WASTEWATER COLLECTION, TREATMENT AND DISPOSAL

Napa Sanitation District (NSD)

History of the Utility

The NSD was created by referendum in 1945 to provide safe wastewater treatment and disposal to city residents and businesses. Construction of a wastewater treatment facility along the Napa River at Imola Avenue, associated sewer lines from the Imola plant to treatment ponds located adjacent to the Napa Airport (i.e. Soscol facility), and system main and lateral relocations were funded by subsequent bond issues. Initially, the Soscol facility ponds provided final treatment for primary treated wastewater originating from the Imola plant.

In 1972, the Regional Water Quality Control Board (RWQCB) upgraded standards for waste discharge into the Napa River to a level that could not be met by the Soscol treatment ponds. The Napa Sanitation District and the then unincorporated area of American Canyon responded by forming the Napa-American Canyon County Wastewater Management Authority (NACWMA). Under a Joint Exercise of Powers Agreement (JPA), the Authority built the Soscol treatment facility at the pond site in 1978.

The NACWMA was dissolved in June 1994 because the City of American Canyon thought it would be less expensive to build their own plant or to ship its wastewater to Vallejo via pipeline. Under the Dissolution Agreement, American Canyon still has access to the Soscol plant and has up to 60 months to determine how it will dispose of its wastewater. American Canyon's contribution to NSD's overall wastewater flow is approximately eight percent (Stewart 1994).

Service Area

The Napa Sanitation District service to the city of Napa generally conforms to the RUL, with the addition of the Silverado Country Club area, Napa State Hospital, and industrial parks around the Napa County Airport (**See Figure CS-8**). The rural areas outside of the NSD and ACCWD service areas are served by septic tank and leach field treatment systems. The NSD has 16 major service areas with drainage basins defined by topography and creeks. Wastewater is collected through a system of 230 miles of main sewer lines.

Wastewater Collection and Treatment System

NSD facilities for wastewater treatment consist of the Imola plant and the Soscol plant and its associated 340 acres of active oxidation ponds. The Imola plant has a primary treatment capacity of 8.0 million gallons per day. NSD discontinued use of the biofilters at the Imola facility in 1983 due to citizen complaints of excess odor production. In 1990, NSD began using the biofilters again during the winter months due to excess loading at the Soscol plant. The Soscol plant has a hydraulic capacity of 15.4 million gallons per day. Both the Imola and Soscol plant facilities have inadequate solids handling facilities and treatment capacity. The problems will be solved upon the implementation of the NSD's Soscol Plant Phase II improvements.

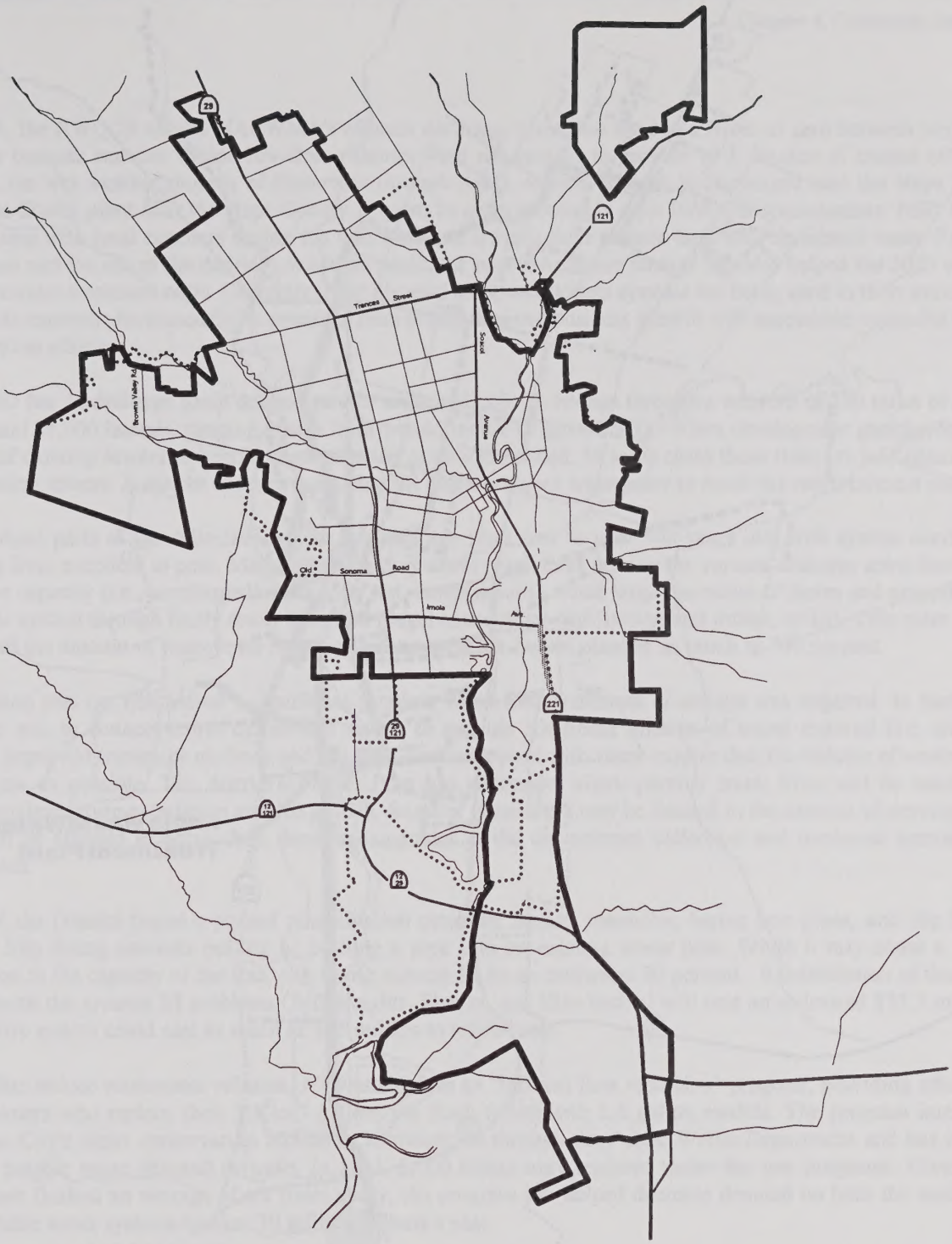

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Figure - CS 8

Existing Napa Sanitation District - Service Boundary

North

1/2 M. 1 Mile 2.5 Miles 5 Miles

0

Service Boundary

Rural Urban Limits

Source: Sanitation District

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Figure - CS 9

Existing Waste Water Collection System

North

725' 1/2 Mile 1 Mile 3 Miles

0

Secondary Collection Lines - (10" - 17")

Major Collection Lines - (18" - 48")

Pumping Stations -

Source: City of Napa Public Works Department

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In 1984, the RWQCB set the NACWMA's effluent discharge rates into the Napa River to zero between May and October because summer season low-flow volumes were not enough to provide 10:1 dilution of treated effluent. During the wet weather months of November through April, treated effluent is discharged into the Napa River from the Soscol plant near the Napa County Airport. In order to comply with RWQCB requirements, NSD began contracting with local ranchers during the mid 1980's to irrigate their pasture land with reclaimed water. Pasture irrigation and the use of the district's oxidation ponds for summer effluent storage has also helped the NSD reduce its wastewater treatment costs. Currently, river disposal and pond storage systems are being used to their maximum allowable capacity. Increased flows resulting from population and business growth will necessitate expanded water reclamation efforts.

The NSD has 16 drainage basin defined service areas and collects sewage through a network of 230 miles of sewer mains and 25,000 laterals, ranging in size from 4 to 66 inches **(Figure CS-9).** When development goes beyond the ability of existing sewers to handle demand, relief sewers are added. In some cases these lines are laid adjacent to the existing sewers. A system of seven pump and lift stations allows wastewater to reach the two treatment plants.

The various parts of the collection system range in age from new to over 100 years old, with system conditions ranging from excellent to poor. Many of the sanitary sewer trunk lines serving the various drainage areas flow near or above capacity (i.e., surcharged) during the wet winter months, when large quantities of storm and groundwater enter the system through faulty sewer lines and illegal connections (infiltration and inflow, or I/I). This extra water can swell the amount of wastewater requiring treatment at the Soscol plant by as much as 700 percent.

Infiltration was not considered a significant problem when little treatment of sewage was required. In fact, past practice was to connect storm drains and sewers to provide additional dilution of waste material (i.e. inflow). Today, improved treatment methods and the high cost associated with them require that the volume of wastewater be as low as possible. The district's Master Plan has addressed where parallel trunk lines will be needed to accommodate future population and job growth. Some of these areas may be limited in the amount of development that will be allowed to occur until necessary upgrades to the downstream collection and treatment systems are completed.

In 1974 the District began a phased rehabilitation program, sealing manholes, laying new pipes, and slip lining others. Slip lining involves pulling or pushing a pipe into an existing sewer pipe. While it may cause a slight reduction in the capacity of the line, slip lining reduces I/I by an estimated 70 percent. Rehabilitation of the three basins with the greatest I/I problems (Alta Heights, Shetler, and Elks basins) will cost an estimated $13.5 million. The entire system could cost as much as $45 million to rehabilitate.

To further reduce wastewater volumes, NSD established an "influent flow reduction" program, providing rebates to homeowners who replace their 3.5 to 7 gallons per flush toilets with 1.6 gallon models. The program interfaces with the City's water conservation ordinance administered through the Public Works Department and has helped reduce potable water demand as well. In 1991, 2,000 toilets were replaced under the two programs. Given that toilets are flushed an average of six times a day, the program has helped decrease demand on both the sanitation and potable water systems by over 30 million gallons a year.

NSD Master Plan Update - 1990

In 1988, the NSD adopted master plan including a 25 year program of capital improvements to meet the Napa Sanitation District's future growth and facility replacement requirements. An update report was adopted in 1990 to address new developments in wastewater treatment and disposal needs. The primary issue was the evaluation of expanding the Soscol treatment plant to include primary treatment and secondary treatment as a result of continuing odor problems. The 1988 Master Plan and the 1990 Update Report projected wastewater flows and treatment requirements for a planning period ending in 2012. The population to be served was estimated at about 82,000 (an increase of 21,000 from the then 61,000) in the primary service area (lands within the City's RUL and

the Silverado Country Club area). This population increase would require an increase of about 8,750 residential service connections.

NSD population projections were based on an evaluation of land use related to current (at that time) zoning land use classifications in the primary service area. An annual growth rate of 1% was used (to match the 1986 General Plan growth rate). The City's 1996 Draft General Plan proposes changes to the location and density distribution of land use; however, because the 1996 Draft General Plan projections use an annual growth of .8%, the projected total population within the RUL by the year 2020 is 81,140 which is less than the NSD estimate of 82,000 projected only to the year 2012. Also, the total number of new dwelling units within the RUL projected by the 1996 General Plan is 5,695 by the year 2012 which is less than the NSD estimate of 8,400 equivalent dwelling units, of which approximately 6,100 would be residential units.

STORM DRAINAGE

Storm Drainage System

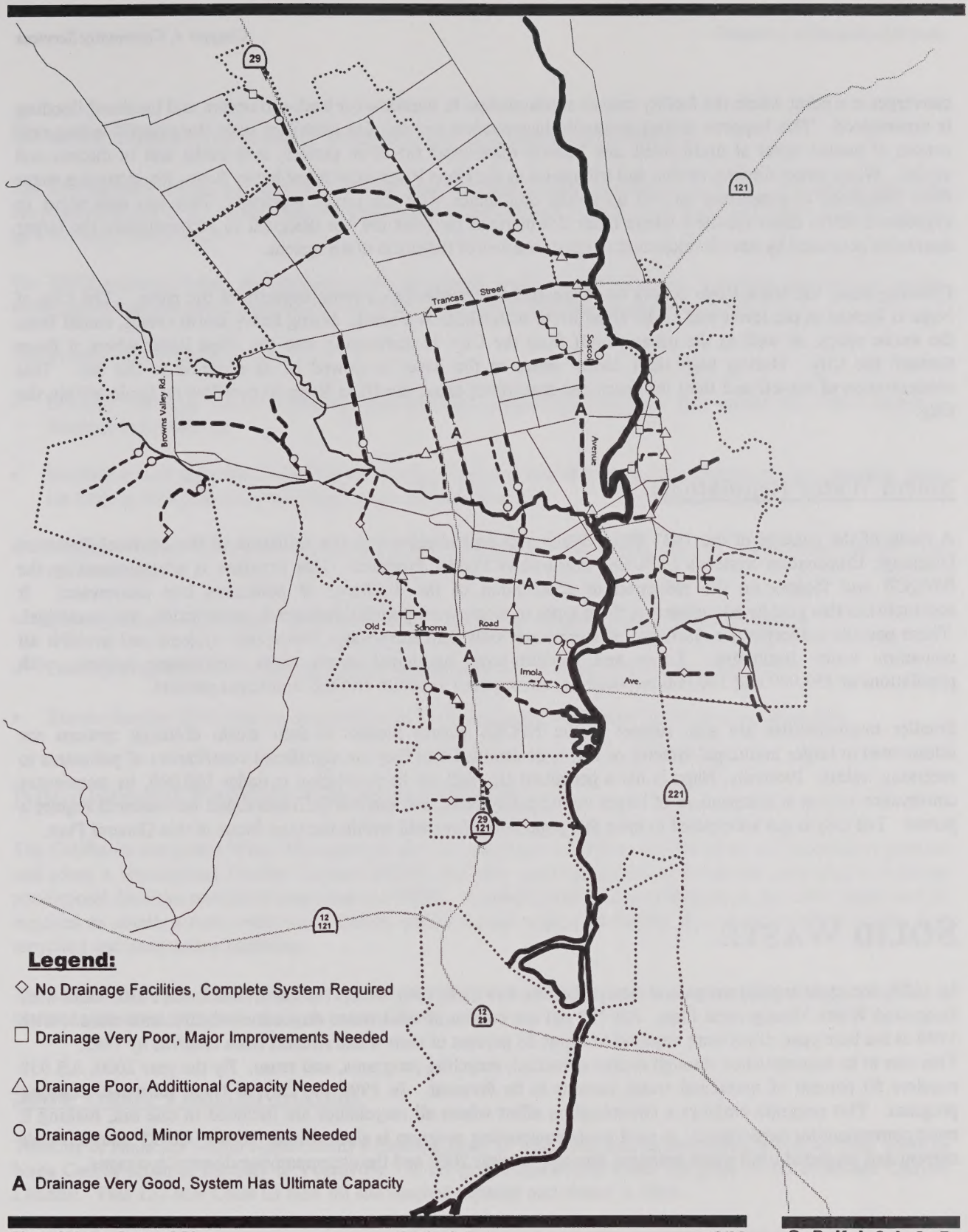
The city's existing storm drainage system service area covers approximately 22 square miles **(Figure CS-10)**. Drainage collection in the city's subbasins operates on a gravity system, facilitating storm-water runoff from low-lying or poorly graded areas into natural drainage channels. Runoff water enters the system through ditches or from street storm drains. The runoff is channeled through ditches, culverts, and buried pipes until it is discharged into a natural channel (i.e. the Napa River or of one of its tributaries). The tributary creeks are typically maintained in their natural state as open channels, providing a low level of water filtration and wildlife habitat. When slope stabilization is required due to severe erosion, improvements are based on review from the State of California Department of Fish and Game.

The PWD assumes that drainage for each local watershed will be fully developed. Segments of Napa's drainage system are classified using a scale relative to the ideal design capacity of the system. This evaluation reflects the ability of the pipes or ditches at the lowest end of the drainage system to handle all the runoff from the watershed arriving at that point. Of Napa's improved channels (ditches or pipes) in its drainage system, approximately 4.3 percent are rated as nonexistent, 20.8 percent are rated poor to very poor, 17.3 percent are rated as fair, 45.8 percent are rated as good, and 11.8 percent are rated as excellent (City of Napa 1990) .

Napa's current Stormwater Drainage Master Plan was prepared in 1960 and is outdated for Napa's present storm drainage needs. The department recognizes the need to update this document. Fiscal constraints have prevented the PWD from keeping all of its drainage system up to date and fully functional (Bruechert 1994).

Flooding

Localized flooding can occur when more surface water runoff arrives at a watershed in a shorter time span than the system is designed to handle. Typically, urban development (impervious surfaces) increases runoff quantity and decreases the delivery time for runoff to converge at storm drain facilities. When the resulting excess runoff



Legend:

◇ No Drainage Facilities, Complete System Required

□ Drainage Very Poor, Major Improvements Needed

△ Drainage Poor, Addittional Capacity Needed

○ Drainage Good, Minor Improvements Needed

A Drainage Very Good, System Has Ultimate Capacity

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Figure - CS 10

Existing Drainage System

North

Collection Lines -

Natural Drainage Channel -

725' 1/2 Mile 1 Mile 3 Miles

0

Source: City of Napa Public Works Department

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converges at a point where the facility cannot accommodate it, overflow (or back-up) occurs and localized flooding is experienced. This happens during unusually heavy storm events. On a smaller scale, localized flooding may consist of pooled water at drain inlets and heavier than usual runoff in gutters, over curbs and in ditches and swales. When larger ditches, swales and tributaries to the Napa River experience heavy flows, the incoming water from tributaries is sometimes backed up at the confluence with the larger waterway. This can also occur in engineered storm drain facilities where older downstream facilities are not designed to accommodate the larger quantities generated by new development in upper reaches of the storm drain system.

Flooding along the Napa River occurs when the runoff exceeds the carrying capacity of the river. The City of Napa is located at the lower end of the Napa River watershed, as a result, during heavy storm events, runoff from the entire valley, as well as the urban runoff from the City, is converging into the Napa River where it flows through the City. During high tides, storm water in the River is slowed in its progress to the bay. This concentration of run-off and tidal influence can sometimes cause the Napa River to overflow its banks within the City.

Storm Water Regulations

A result of the passage of the 1987 Clean Water Act amendments was the initiation of the National Pollutant Discharge Elimination System's (NPDES) Stormwater Permit Program. This program is administered by the RWQCB and focuses on the reduction or elimination of the discharge of pollutants into stormwater. It accomplishes this goal by administering three types of stormwater permits, industrial, construction, and municipal. These permits authorize the discharge of stormwater only into stormwater conveyance systems and prohibit all non-storm water discharges. Large and medium-sized municipal storm water conveyance systems, with populations of 250,000 and 100,000 respectively, are required to obtain NPDES municipal permits.

Smaller municipalities are also subject to the NPDES permit process if their storm drainage systems are interrelated to larger municipal systems or if it is determined that they are significant contributors of pollutants to receiving waters. Presently, Napa is not a permitted city because its population is under 100,000, its stormwater conveyance system is independent of larger municipal systems, and the RWQCB has found no reason to require a permit. The City is not anticipated to meet this population threshold within the time frame of this General Plan.

SOLID WASTE

In 1989, the state legislature passed Assembly Bill 939 (AB 939) which instituted California's first state-wide Integrated Waste Management Plan. AB 939 put the burden of solid waste disposal on California's cities. With 1990 as the base year, cities were required to divert 25 percent of their waste streams from landfills by 1995.
This was to be accomplished through source reduction, recycling programs, and reuse. By the year 2000, AB 939 requires 50 percent of municipal waste streams to be diverted. In 1990 the City of Napa started a recycling program. This program employs a commingling effort where all recyclables are included in one bin, making it more convenient for participants. A yard waste composting program is also utilized. **Table CS-12** shows Napa's current and projected solid waste tonnages through the year 2000 and the accompanying diverted tonnages.

Source Reduction and Recycling Element (SRRE)

The City adopted a Source Reduction and Recycling Element (SRRE) on October 1, 1991. The SRRE identifies the procedures the City will implement in order to divert from landfills 25% of the solid waste generated in the city by 1995 and 50% by 2000.

The SRRE consists of nine components: waste generation study, source reduction, recycling, composting, special waste, education and public information, disposal facility capacity, funding, and integration.

The overall goals of the SRRE are:

- Develop workable source reduction, recycling and composting programs that reflect the City's attitudes, interests and concerns;
- Develop source reduction, recycling and composting programs that meet (as a minimum) the mandated goals set forth in the California Integrated Waste Management Act;
- Develop source reduction, recycling and composting programs that do not significantly impact the environment;
- Develop education programs to encourage the maximum participation of the City's citizens;
- Develop programs that encourage market development for recycling and composting; and
- Ensure that the SRRE can be integrated easily into the County Integrated Waste Management Plan.

Nondisposal Facility Element (NDFE)

The California Integrated Waste Management Act was amended in 1992 to require cities and counties to prepare and adopt a Nondisposal Facility Element (NDFE) for new nondisposal facilities and any expansion of existing nondisposal facilities needed to implement an SRRE. A nondisposal facility is defined as any solid waste facility required to obtain a state solid waste facility permit except a disposal facility or a transformation facility (i.e. recycling and composting facilities).

The City's NDFE was adopted on June 6, 1994 and identified a recycling and yard waste composting facility and a planned transfer station both of which now are in operation.

Solid Waste Transfer Station

The City of Napa lies within Napa County's Garbage Zone 1. This zone administers collection of all solid waste in Napa County south of the City of Yountville. In the past, Napa's solid waste has gone to the American Canyon Landfill. This 122 acre Class III land fill site reached capacity and closed in 1995.

Prior to closing the American Canyon site, landfills in Solano County, Potrero Hills and B&J Dropbox have were considered and rejected as possible alternative sites for taking the waste stream. Other sites were also rejected by referendum, and the American Canyon Development Corporation is no longer pursuing a replacement landfill. In lieu of this, Napa County pursued an alternate strategy for its waste disposal (County of Napa 1992).

In August 1993, Napa County, through a Joint Powers Agreement with the cities of Vallejo and Napa, formed the South Napa Waste Management Agency (SNWMA) to deal with American Canyon's impending landfill closure. The Authority was formed to provide economic coordination of solid waste management services such as acquisition, construction, financing and operation of a transfer facility, and to efficiently and fairly assure against potential adverse effects of past solid waste management services in the service area. .

The SNWMA constructed a 35 acre solid waste transfer station south of Napa at the Airport at 889 Devlin Road; the transfer station began operations on July 1, 1995 and serves the same geographic area previously serviced by the American Canyon Landfill. It is designed to process and transfer commercial, industrial and self-haul delivered solid waste and can handle an average of 520 tons per day (1,440 tons per day under peak conditions).

The transfer facility site includes: 1) a 37,800 s.f. transfer facility with areas for public self-haul use and commercial use; 2) a 212,500 s.f. transfer trailer/rail container storage area; 3) a 26,000 s.f. recycling drop-off/household hazardous waste area; 4) a 2,600 s.f. administrative office building; and 5) a scale house. Rabanco of California operates the transfer facility for the South Napa Waste Management Authority (the owner). The transfer facility is open 12 hours per day, Monday through Saturday with the majority of solid waste delivered during the weekdays between 9 AM and 3 PM.

The transfer facility processes and transfers wastes commonly collected by the franchised solid waste collectors of the Authority's members. However, the following types of solid waste are excluded: 1) the source-separated recyclables and compostable materials intended for delivery to the City's recycling and composting facility; and 2) waste defined as "hazardous waste" under federal or state laws or regulations. The solid waste received by the transfer facility is placed in intermodal shipping containers and delivered by rail 710 miles for final disposal in the Roosevelt Regional Landfill in Klickitat County, Washington (the largest handler of rail-shipped solid waste in the country).

Recycling and Yard Waste Composting Facility

Source-separated residential and commercial recyclable materials and yard waste are handled at the Napa Garbage Service (NGS)/City of Napa recycling and composting facility. The facility is owned jointly by NGS and the City and is operated by NGS (the franchised waste hauler). The facility handles organics (yard waste, other plant debris and wood waste) and source-separated recyclables (aluminum, tin, plastic, newspaper, cardboard, magazines, glass and office paper. These materials are delivered to the facility by NGS trucks from residential curbside recycling and yard waste pick-ups and commercial recycling accounts. The sorting of recyclable materials is done by semi-automated methods and composting is done by chipping, grinding, windrowing, curing and screening. Recyclable materials are marketed to material end markets and yard waste is sold to both local residential and commercial customers.

Table CS-12
Solid Waste Generation and Diversion in the City of Napa (tons)

Year	Solid Waste Generation	Solid Waste Diversion	Net Solid Waste
1990	71,631	1,933 (3%)	69,698
1991	74,530	9,838 (13%)	64,692
1992	64,752	12,444 (19%)	52,308
1993	60,129	13,623 (22%)	46,506
1994	71,959	22,811 (32%)	49,148
1995	73,251	23,162 (32%)	50,089
1996	74,628	23,710 (32%)	50,918
1997	76,063	24,121 (32%)	51,942
1998	77,534	39,171* (51%)	38,363
1999	79,043	39,969* (51%)	39,070
2000	79,904	39,578* (50%)	40,326

Source: City of Napa General Plan Source Reduction and Recycling Element, October 1991.
* Estimates include unsorted recycled materials.

LIBRARY

The Napa Main Library was built in 1974 and is located at 1150 Division Street in downtown Napa. It is a 33,000-square-foot building and serves a population of 66,265 (104,455 county wide) in its general service area. The library is open an average of 45.5 hours per week and employs a staff of 30 with a 1993 budget of $1,533,698. It has a collection size of approximately 139,000 items, or 2.1 items per capita. The library has an annual circulation of approximately 470,500 items, or 7.1 circulations per capita per year. It also serves as the primary resource center for the Napa City-County Library, and includes an extensive collection of popular, basic, and study materials which are shared throughout the county.

PUBLIC UTILITIES

Electricity

Electricity services in the City of Napa are provided by the Pacific Gas and Electric Company (PG&E).
The City of Napa is fed from four electric substations as follows: 1) Tulocay Sub, South of Napa on Highway 221; 2) Basalt Sub, South of Napa on Highway 221 and north of Tulocay Sub; 3) Napa Sub, 300 Burnell Street, near the Napa fairgrounds; and 4) Pueblo Sub on Big Ranch Road, north of Napa. Overall electricity consumption for 1993 was approximately 306,208,405 kilowatt hours (kWH). Of this amount, 145,443,383 kWH was used residentially. The balance of consumption is as follows: 1) small commercial - 37,853,838 kWH, 2) large commercial - 100,473,320 kWH, 3) agricultural - 1,978 kWH, 4) streetlights - 2,717,486 kWH, and 5) industrial - 19718,400 kWH (Fallon 1994).

Gas

Gas services in the City of Napa are also provided by PG&E. The City of Napa is fed from two major gas systems. The first is from the south along Foster Road into west Napa, and the second system emanates from the south along Soscol Avenue into east Napa. Overall, gas consumption for 1993 was approximately 1,901,126 decatherms. Of this amount, 1,469,742 decatherms or 77% was consumed by residential customers. The balance of gas is consumed by agricultural, commercial, and industrial customers.

Telephone & Cable Television

Telephone service in Napa is provided by Pacific Bell. The company's main switchboard building and relay/receiving site is located in the central downtown area.

Viacom Cable provides cable television service to residents of the community. The service includes a community access channel which broadcasts community-related programming including live broadcasts of the Planning Commission and City Council meetings.

End of Chapter 4

CHAPTER 5
PARKS AND RECREATION

INTRODUCTION

The provision of parks throughout the City has long been an integral element of the community's planning and development. Parks are a critical amenity, providing both opportunities for respite from the built environment and places for outdoor recreation and community gathering and celebration. Public recreational facilities and programs also help bind the community and contribute to Napa's reputation as a desirable place to live. They provide an opportunity for safe and supervised recreation for youth as well as opportunities for ongoing recreation and enjoyment for adults. To serve the diverse population of the Napa community, recreational activities span a wide range from soccer to dance, basketball to music, golf to painting. A variety of programmatic needs must be considered in recreational facilities and program planning.

NATURAL AND CULTURAL CONTEXT

The City's natural and cultural setting provide both opportunities and constraints to the provision of parks and recreational facilities. For example, the City's hills are not suitable for baseball fields, but are well suited for hiking and picnicking. Similarly, the City's rich history allows for an important cultural element in the City's recreational facilities, but the preservation of historic character may limit the range of uses of a facility or area. Key elements of the City's natural and cultural setting and the implications of those element for the City's parks and recreational planning are described in this section.

Natural Setting

The City of Napa has several major physical features which have influenced its development in the past and will shape its future. Four elements of the City's physical character are particularly important: the hills which flank the City on its east and west; the Napa River which bisects the City; agricultural lands and vineyards which border it on the north and south; and the streams which meander through it. The opportunities and constraints posed for parks and recreation planning by these features are described below.

Hills

Steep hills border the City on both its east and west. These hills are an opportunity for "passive" recreation such as hiking, picnicking and viewing the City. However, hill topography is not generally conducive for more active types of facilities such as ball fields, thereby constraining the location of those facilities to the valley floor.

The River

The Napa River allows for a variety of recreational activities including those on the water (boating, kayaking, fishing), as well as those on the banks such as hiking and bicycling. The river is a connecting element for the City, allowing for a

lineal recreational and alternative transportation corridor through the many neighborhoods which border it. This recreation and transportation corridor has begun to be developed and many trail easements are already in place. The River also acts as a constraining element, dividing the City into two sides thereby limiting access to park facilities.

Future floodway improvements offer an opportunity for the establishment of the corridor along the length of the Napa River. Because the character of possible flood improvements has not been determined, near-term efforts to improve the corridor have been limited to avoid costly improvements which would then be eliminated by flood control work.

The use of the river and its banks for recreational purposes is also constrained due to the river's importance as habitat. The river itself is habitat for a variety of water fowl, fish and plant life, some of which is endangered. The river's banks provide habitat for a wide variety of plants and animals. Both types of habitat can be degraded by excessive human intrusion or development. Much of the river's habitat values have already been severely compromised by past development. Potential access improvements must be sensitive to the remaining habitat values of the river, and to the potential to improve those values.

Agriculture

The agricultural lands which border Napa contribute to Napa's image as a semi-rural community, separate from the urban environments which dominate much of the San Francisco Bay Area. The community's desire to preserve its agricultural setting has led to strong limits on the City's expansion and development. Agricultural lands may limit the location of most park and recreation facilities primarily to the existing area within the City's Rural Urban Limit line (RUL), identified in the City's plan as the area appropriate for development. The open agricultural lands of the valley are also an opportunity because of their visual beauty and open character. Hiking and bicycling are important recreational activities partially because of the agricultural environment.

Stream Corridors

Stream corridors are similar to the River in that they provide a special opportunity to provide lineal trails and other recreational amenities.

However, streams are bordered by riparian habitat: a dense narrow ribbon of trees, shrubs and associated plants that grow along waterways, whether seasonal or year-round. These streams provide habitat for fish and other wildlife and a variety of plant species. Recreational improvements must be sensitively planned and designed to respond to the critical habitat values of these areas. Many stream corridors have also been largely developed, thereby limiting the opportunity to create corridors without affecting existing residences. Nevertheless, the opportunity remains along such undeveloped corridors as the Salvador Channel and portions of other streams throughout Napa to provide additional hiking and recreation trails for residents of the community.

Other Natural Features

Other important natural environments are largely located outside of the City limits, but provide important nearby recreational opportunities for Napa residents. Two important features are the nearby marshlands and the City's reservoirs.

- **Marshlands:** The extensive tidal marshlands just south of Napa provide critical wildlife habitat. Although most are outside the jurisdiction of the City, portions of this area are accessible from nearby trails and roads. Much of the marshlands are publicly owned or protected such as the San Pablo Bay National Wildlife Refuge. The marshlands provide an opportunity to view wildlife and a unique natural resource area. Marshlands associated with the River are located within the City, including a 13-acre restored tidal marsh and interpretive trail at Kennedy Park.

Marshlands are also a constraint because of their importance as habitat. Similar to other wetlands areas, human access must be carefully planned and controlled so as not to significantly compromise habitat values.

- **Lakes and Reservoirs:** The City of Napa owns two major reservoirs: Lake Hennessey and Milliken Reservoir. Along with their associated watershed lands, these lake areas include over 5,000 acres. Lake Hennessey, located 12 miles north of Napa on Highway 128, is open to the public for fishing, limited boating, and picnicking below the dam. Milliken reservoir, located northeast of the City, is not open to the public. Lake Berryessa, located 15 miles north of Napa and operated by the federal Bureau of Reclamation, serves as a major recreational area for a large region. The City's two reservoirs and watershed areas represent a significant recreational resource.

  Increased public use of the City's reservoirs and watershed is constrained because of their use as water supply. Protection of that water supply is a primary concern when evaluating these areas for recreational uses; activities at these areas must be limited to those which do not have a significant effect on water quality.

Cultural Setting

Napa's location as a place for human settlement began 4000 years ago when the first Native Americans settled along its creeks and river. Napa's history as an urban settlement began in 1847 when the original town site of Napa City was laid out by Nathan Coombs at the uppermost point of river navigation, as a transfer point for shipping of goods between the Napa Valley and San Francisco. Napa's incremental expansion has left a legacy of periods of architectural heritage radiating outward from the Napa River. A more recent addition to the City's cultural heritage is its location in the heart of one of the premier winemaking regions in the world.

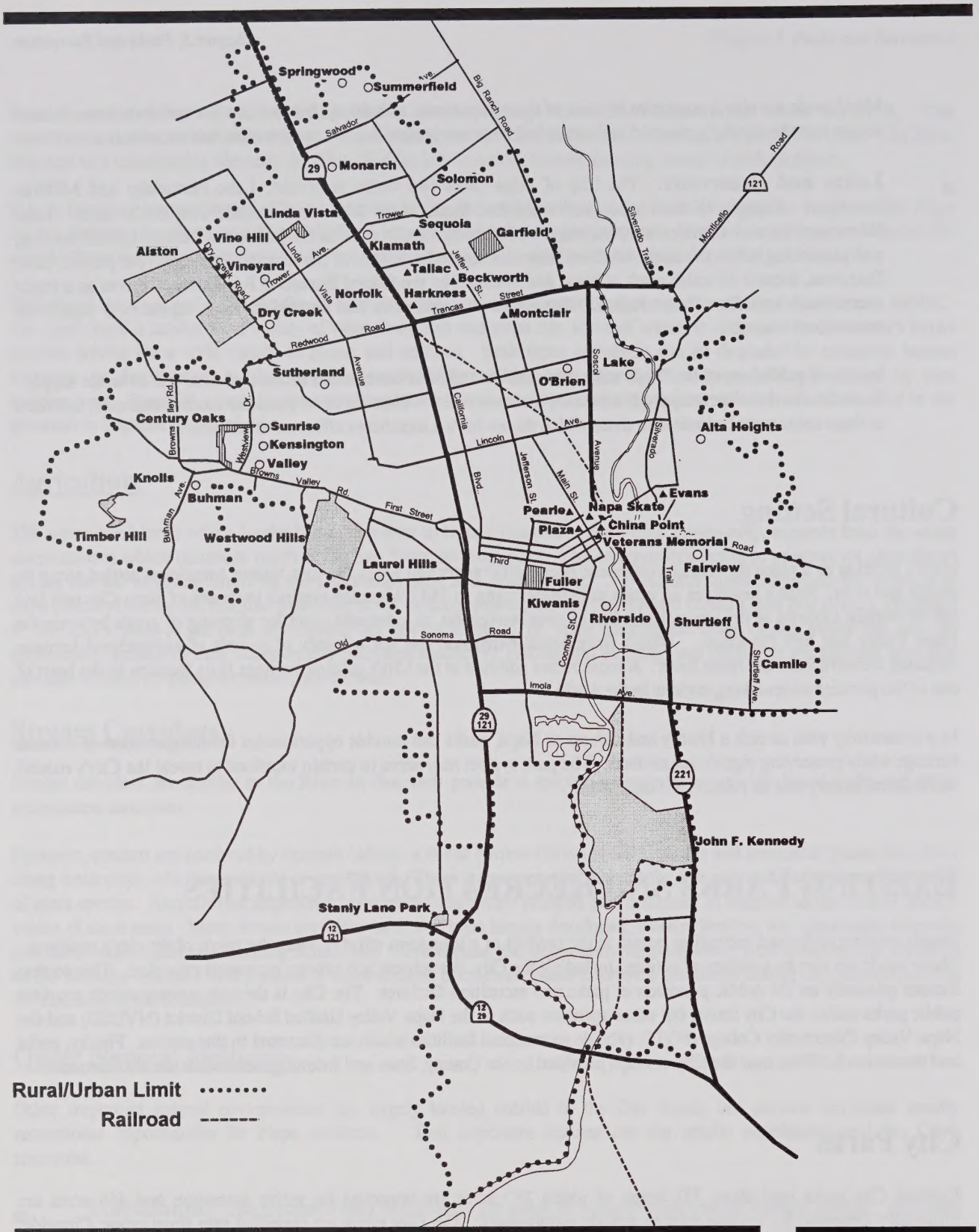
In a community with as rich a history and culture as Napa, parks can provide opportunities for interpretation of cultural heritage while preserving significant artifacts. The park system may serve in certain locations to reveal the City's natural and cultural history and its role in the Napa Valley.

EXISTING PARKS AND RECREATION FACILITIES

Napa's existing parks and recreation system is the product of a long-term effort to meet the needs of the city's residents. Those needs are met by a variety of entities, including the City, the schools and private recreation providers. This section focuses primarily on the public provision of parks and recreation facilities. The City is the only agency which provides public parks within the City limits, but other agencies, such as the Napa Valley Unified School District (NVUSD) and the Napa Valley Community College (NVC), provide recreational facilities which are discussed in this section. Finally, parks and recreation facilities near the City of Napa provided by the County, State and federal governments are also discussed.

City Parks

Existing City parks total about 753 acres, of which 287 acres are improved for active recreation and 466 acres are minimally improved for passive uses or remain unimproved. The City parks are classified into three types: Citywide, Community and Neighborhood. In addition there are mini-parks and civic spaces which contribute to the City's supply of parks and recreational areas. Each classification is described below, accompanied by a listing of the parks and the facilities found in those parks in Table PR-1. Figure PR-1 shows the location of existing parks. The following description indicates existing conditions as of 1992.



City of Napa General Plan | Parks.DS4 | 12/98

Figure - PR 1

Existing Parks (1992)

North

725' 1/2 Mile 1 Mile 3 Miles

0

City Wide

Community

Neighborhood

Mini-Park

Source: City of Napa Community Resources Department

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Citywide Parks, Open Space and Trail System

City-wide parks include active recreation and/or open space areas which are of significance to the entire community. They are the location for major active recreation facilities such as ballfields, as well as specialized facilities such as a boat launch. Some citywide parks are oriented largely or completely towards passive activities such as picnicking and hiking. These areas include major trail corridors such as the Napa River Trail.

Included in this citywide parks classification are the following parks:

Alston Park

The park includes 158.1 acres open for passive use. Facilities include two small parking lots, hiking trails, and picnic tables. Several public meetings have given direction to an approved master plan for passive development of the site.

J.F. Kennedy Park

Located at the southern extent of the City, Kennedy Park is the largest City park, containing 346.9 acres of which 190 acres are improved. The City is in the process of developing a master plan for future park utilization and development of recreational facilities. Improvements at the park include a golf course, soccer and softball fields, a recreation building, a boat launch, a playground and tot lot, picnic areas, parking and restrooms. A 13 acre restored wetlands with interpretive trail has recently been completed.

Westwood Hills Park

Westwood Hills Park is 110.9 acres extending from the heavily treed valley floor up a steep hill to an open, grassy knoll with long views. The master plan for this park area adjacent to Browns Valley Road has been largely implemented and includes the Carolyn Parr Nature Center, a small meadow, picnic area and off-street parking. The Community Resources Department plans to prepare a resource management plan for the unimproved regions of the park.

Timberhill Park

Located south of Timberhill Road in the western hills, Timberhill includes 13 acres of unimproved parkland intended as an open space for passive use. The existing road to the hilltop passes through private property thereby restricting hilltop access. The park's configuration and steep topography suggest its long term use for passive activities such as hiking and picnicking.

The Napa River Trail

A plan, prepared by the National Park Service in cooperation with the City of Napa and several other agencies, calls for development of a lineal trail corridor along the length of the Napa River. Because of the importance of this proposed trail corridor to the character and future of the City, it is considered a Citywide park and open space resource as well as an alternative transportation corridor. Incorporated into the corridor would be the trail, natural areas, and various recreational facilities including fishing piers and boat launches. The trail is envisioned as a public, multi-use path from Trancas to Kennedy Park and eventually to the Stanly Ranch, with possible links to other trails and parklands. A more detailed plan - the "Napa Urban Waterfront Restoration Plan" - has been adopted for the downtown portions of the River. Some portions of the corridor and some facilities (such as the Main Street Landing at Fourth Street) already exist.

The Plan includes a schematic trail plan, a map of physical and cultural resources, existing and proposed recreation activities, land ownership, easements and accessibility, and general design guidelines and an implementation strategy. The plan calls for a trail and river access to be incorporated into any proposed flood control project for the River.

Stanly Lane Park

While no master plan has been developed for this 2.6 acre parcel located at Stanly Lane and Golden Gate Avenue, a bicycle rest stop and staging area has been considered due to its close proximity to the Regional Bay Trail. This property was acquired from Caltrans in 1989 as part of a surplus land sale.

Community Parks

The City has four community parks totaling 45.8 acres, of which 28.4 acres are improved for active recreation. Community parks have a service area of 1.5 -2 miles and include active recreation facilities such as ballfields and community centers. The community parks are oriented towards being the recreational focus for a "community" which includes many neighborhoods. However, because the facilities in community parks are in limited supply, they attract users from throughout the City.

Century Oaks Park

Century Oaks Park totals 13.3 acres of which 9.1 are developed. A 2 acre steep roadside portion remains minimally improved, while a larger level L-shaped parcel is improved (except for a small undeveloped portion) for community use and includes basketball courts, a playground, and picnic tables. A site master plan adopted in 1988 also proposes a community center.

Fuller Park

Fuller Park, located in central Napa, is the oldest City park, acquired in 1905. Originally known as Campbell's Grove, the 10-acre area was the traditional location for the town's baseball and football games. The park was planted with over 60 species of trees and hundreds of shrub species, with the park perimeter defined by a double planting of sycamore, elm, ash and maple. A fountain of Italian marble, originally erected in 1910 at the intersection of Polk and Franklin Streets, was re-installed in Fuller Park.

Facilities at the park include a playground, the Fuller Recreation Building (currently used for a Headstart program), a maintenance building, picnic area/barbecue facilities, horseshoe pits (2) and restrooms.

The Parks and Recreation Commission has approved a master plan which includes the proposed development of a Community Center and off-street parking. There remains concern over the potential impacts of providing off-street parking and this issue may be revisited as part of Master Plan review at a future date.

Garfield Park

Garfield Park totals 14.5 acres, of which 7 acres are developed. The Park is located on the north side of the City and is divided by the Salvador Channel. The improved area includes three baseball fields leased to Little League, restrooms and parking. The Little League facilities are not available for general public use.

An original master plan included a swimming pool and other facilities, but has not been implemented and has been largely abandoned due to lack of available funding. Alternative means of providing a community center (including moving the historic Gasser House to the park) are under consideration.

Table PR-1
Exiting Parks and Facilities

	ACREAGE			FACILITIES														
	Total Acres	Improv. Acres	Unimp. Acres	Y. Baseball	Reg. Softball	Reg. Soccer	Multifield	Basketball	Volleyball	Hiking/Jogging	Exer. Course	Play Equip	Picnic	BBQ	Benches	Water Fountain	Restroom	Parking
CITYWIDE PARKS																		
1 Alston	158.05		158.05							1			1			1	1	1
2 Kennedy	346.91	190	156.91		1	1			1	1		1	1	1	1	1	1	1
3 Westwood Hills	110.88		110.88							1			1	1		1		1
4 Timberhill	13.02		13.02															
5 Stanly Lane	2.64		2.64															
Subtotal	**631.5**	**190**	**441.5**	**0**	**1**	**1**	**0**	**0**	**1**	**3**	**0**	**1**	**3**	**2**	**1**	**3**	**2**	**3**
COMMUNITY PARKS																		
1 Century Oaks	13.3	9.1	4.2					1				1	1		1	1		
2 Fuller	10.05	10.05										1	1	1	1	1	1	
3 Garfield	14.51	7	7.51	3													1	1
4 Las Flores	7.9	2.2	5.7				1	1				1			1	1		
Subtotal	**45.76**	**28.35**	**17.41**	**3**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**3**	**2**	**1**	**3**	**3**	**2**	**1**
NEIGHBORHOOD PARKS																		
1 Alta Heights	1.86		1.86															
2 Buhman	3.57	3.57										1	1		1	1		
3 Camille	4.94	4.94								1		1			1	1		
4 Dry Creek	2.5	2.5						1	1			1	1	1	1	1		
5 Fairview	2.2	2.2					1	1				1	1	1	1		1	1
6 Kensington	1.46	1.46											1					
7 Kiawanis	1.72	1.72			1											1	1	
8 Klamath	2.36	2.36						1		1		1	1		1	1		
9 Lake Park	8.78	8.78						1	1		1	1			1			
10 Laurel Street	2.34	2.34																
11 Monarch	1.33	1.33					1	1				1	1					
12 O'Brien	8.6	8.6								1	1	1	1	1	1	1	1	
13 Riverside	3.44	3.44																
14 Shurtleff	4.97	2.4	2.57										1	1	1			
15 Solomon	1.8	1.8										1	1		1			

	ACREAGE			FACILITIES														
Neighborhood Parks Continued	Total Acres	Improv. Acres	Unimp. Acres	Y. Baseball	Reg. Softball	Reg. Soccer	Multifield	Basketball	Volleyball	Hiking/Jogging	Exer. Course	Play Equip.	Picnic	BBQ	Benches	Water Fountain	Restroom	Parking
16 Springwood	2.3	2.3						1	1			1	1		1	1		
17 Summerfield	1.53	1.53						1			1	1	1		1	1		
18 Sunrise	0.88	0.88						1	1				1					
19 Sutherland	3	3									1	1	1	1	1			
20 Valley	2.02	2.02										1	1		1	1		
21 Vine Hill	4.17	4.17					1					1	1		1	1		
22 Vineyard	2.6	2.6											1					
Subtotal	**68.37**	**63.94**	**4.43**	**0**	**1**	**0**	**3**	**8**	**4**	**3**	**4**	**14**	**16**	**5**	**14**	**10**	**3**	**1**
MINI PARKS & CIVIC SPACES																		
1 Beckworth Tot Lot	0.14		0.14									1			1	1		
2 China Point Park	0.78		0.78										1					
3 Evans Tot Lot	0.36	0.36										1			1	1		
4 Harkness Mini Park	0.56	0.56											1					
5 Jefferson Mini Park	0.09		0.09												1			
6 Knolls Mini Park	0.9		0.9															
7 Main Street Landing	0.25	0.25																
8 Montclair Tot Lot	0.13	0.13										1			1	1		
9 Norfolk Tot Lot	0.15	0.15										1			1	1		
10 No. Jefferson Mini Park	0.64	0.64																
11 Pearl Street Park	0.87	0.4	0.47										1					
12 Pine & Monroe Mini	0.08	0.08																
13 Parkway Plaza	0.21	0.21														1		
14 Sequoia Tot Lot	0.13	0.13										1			1	1		
15 Napa Skate Park	0.91	0.91										1			1	1		
16 Tallac Tot Lot	0.15	0.15										1			1	1		
17 Verterans Memorial	0.87	0.87										1			1			
Subtotal	**7.22**	**4.84**	**2.38**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**3**	**0**	**9**	**8**	**0**	**0**
Citywide Parks Total	**631.5**	**190**	**441.5**	**0**	**1**	**1**	**0**	**0**	**1**	**3**	**0**	**1**	**3**	**2**	**1**	**3**	**2**	**3**
Community Parks Total	**45.76**	**28.35**	**17.41**	**3**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**3**	**2**	**1**	**3**	**3**	**2**	**1**
Neighborhood Parks Total	**68.37**	**63.94**	**4.43**	**0**	**1**	**0**	**3**	**8**	**4**	**3**	**4**	**14**	**16**	**5**	**14**	**10**	**3**	**1**
Mini-Parks and Civic Spaces Total	**7.22**	**4.84**	**2.38**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**3**	**0**	**9**	**8**	**0**	**0**
TOTALS ALL PARKS	**752.85**	**287.13**	**465.72**	**3**	**2**	**1**	**4**	**10**	**5**	**6**	**4**	**26**	**24**	**8**	**27**	**24**	**7**	**5**

Las Flores Park

Located between Las Flores Drive and Caesar Street at Fairfax Drive, Las Flores Park totals 7.9 acres, of which 2.2 are improved. The improved acreage includes a basketball hoop, a multi-use field a playground, benches and picnic tables. The undeveloped area is to be developed into playfields and two tennis courts. A new community center includes indoor court space, a kitchen, a meeting room and restrooms.

Neighborhood Parks

Neighborhood parks provide informal general use play areas for an immediate neighborhood. They have a service area of one-half mile where there are no significant barriers to access. They generally include a children's playground with play structures and a small level grass area for sports and games. There are 22 neighborhood parks located throughout the City totaling 68.37 acres, with an average park acreage of 3.2 acres. Two-thirds of the parks are improved with play equipment, picnic areas and benches. Four parks include a field of sufficient size for informal sports. The parks and their current developed facilities are summarized in Table PR-1.

Mini-Parks and Civic Spaces

Mini-parks

Mini-parks are small spaces (under one acre in size), primarily used as neighborhood play areas. There are 11 sites identified as mini-parks, half of which are improved with play equipment, benches and drinking fountains. The parks and facilities are summarized below:

- **Beckworth Tot Lot:** 0.14 acres
- **Evans Tot Lot:** 0.36 acres with play equipment
- **Harkness Mini-Park:** 0.56 acres with picnic area
- **Jefferson Mini-Park:** 0.09 acres, landscaped with bench.
- **North Jefferson Mini-Park:** 0.64 unimproved acres adjacent to El Centro School
- **Knolls Mini-Park:** 0.9 unimproved acres
- **Montclair Tot Lot:** 0.13 acres with play equipment.
- **Norfolk Tot Lot:** 0.15 acres with play equipment
- **Sequoia Tot Lot:** 0.13 acres with play equipment
- **Tallac Tot Lot:** 0.15 acres with play equipment
- **Napa Skate Park:** A .91 acre site designed for skateboarding, with play equipment, picnic tables, benches and barbecue.

Civic Spaces

Civic spaces are relatively small plazas, landscaped areas and other publicly owned "civic" areas, especially in the downtown area. Many are used for cultural activities such as music. They include the following:

- **China Point Park** consists of 0.78 undeveloped acres located across Napa Creek from Veterans Park.
- **Parkway Plaza**, located downtown off First Street adjacent to the Clock Tower, is a 0.21 acre courtyard plaza with fountain designed as a gathering area.

- **Pearl Street Park**, .87 acre park (0.40 acres improved) includes a former street right-of-way associated with a creek crossing.
- **Veterans Memorial Park** is located on the Napa River, between Third and Main Streets. The .87 acre park provides a formal overlook to the Napa River and serves as the focus for many downtown cultural, musical and recreation activities.

OTHER PARK AND RECREATION RESOURCES

City Reservoirs

The City, through the Water Department, owns and operates two water reservoirs outside the City: Lake Hennessey and Milliken Reservoir. The two reservoirs and watershed areas represent possible recreational resources. However, protection of the water supply must be a primary concern when evaluating these areas for recreation uses. The costs and benefits of increasing public access must be analyzed prior to any recommendation regarding recreational use of these sites.

- **Lake Hennessey:** Located 12 miles north of Napa, Lake Hennessey has 650 acres of water surface and a protected watershed of 2,820 acres. Fishing, limited boating, and picnicking below the lake are permitted. The watershed, with the exception of the lake shoreline, is not currently open to the public. The area is well-used on weekends and there may be potential for expanding recreational opportunities.

- **Milliken Reservoir:** Located 5 miles northeast of Napa, Milliken Reservoir includes 2,230 acres of watershed. In the past, during summer months, the reservoir was the site for recreation day camps and also for an overnight community camp. Due to deteriorating facilities, the area is no longer operated by the Community Resources (formerly, Parks and Recreation) Department.

County Parks and Recreation

The County does not operate a park system and has not actively sought to create park land. The County owns or leases four recreational areas within the unincorporated portion of Napa County.

- **Cuttings Wharf Boat Launch Facility:** Located south of the City of Napa on the west side of the Napa River, this facility consists of a parking lot, restrooms, boat launch ramp and fishing pier.

- **Yountville Ecological Preserve:** Located on the Napa River south of the town of Yountville, this five acre site was developed by the California Department of Fish and Game and includes a natural area, trails and a small parking area.

- **Skyline Wilderness Park:** Located east of the City of Napa at Imola and Fourth Avenue, this 850 acre park is leased from the State for $100 per year and is managed by the volunteer efforts of the private non-profit Skyline Park Citizens Association. It includes a creekside picnic area and trails. Plans for future development include an archery range, children's play area, visitor center, group camp area and botanic garden. Daily (or annual) use fees are charged.

- **Solano Avenue Bike Rest Stop:** Located just north of the City on Solano Avenue at Highway 29, the bike rest area is minimally improved.

State of California

Extensive state lands in Napa County are within 1/2 hour driving time from the City of Napa. These lands offer a significant potential recreational resource, but most are currently underutilized.

- **Rector Reservoir:** Maintained to meet the water supply requirements of the State Veterans Hospital at Yountville, this reservoir and watershed land are off-limits to the public to protect water quality.

- **Sugarloaf Ridge State Park:** This State Park extends into Napa County from Sonoma County but is currently accessible only from Sonoma County. A draft Napa County Park and Recreation Master Plan (never adopted) recommends trail development to permit access from Napa Valley.

- **Bothe-Napa Valley State Park:** Situated along the Richie Creek, halfway up the Napa Valley, this park has camping, picnic areas seasonal swimming and an historic water wheel and mill.

- **Robert Louis Stevenson State Park** is located 30 miles north of Napa and is partially developed, primarily for hiking.

Federal

- **Lake Berryessa:** Managed by the Federal Bureau of Reclamation, Lake Berryessa is located 15 miles north of the City of Napa and serves as a recreational area for much of Northern California. Recreation areas at the lake provide opportunities for boating, swimming and fishing. Extensive watershed lands north, east and west of Lake Berryessa are operated by the Bureau of Land Management (BLM).

Multi-Jurisdiction

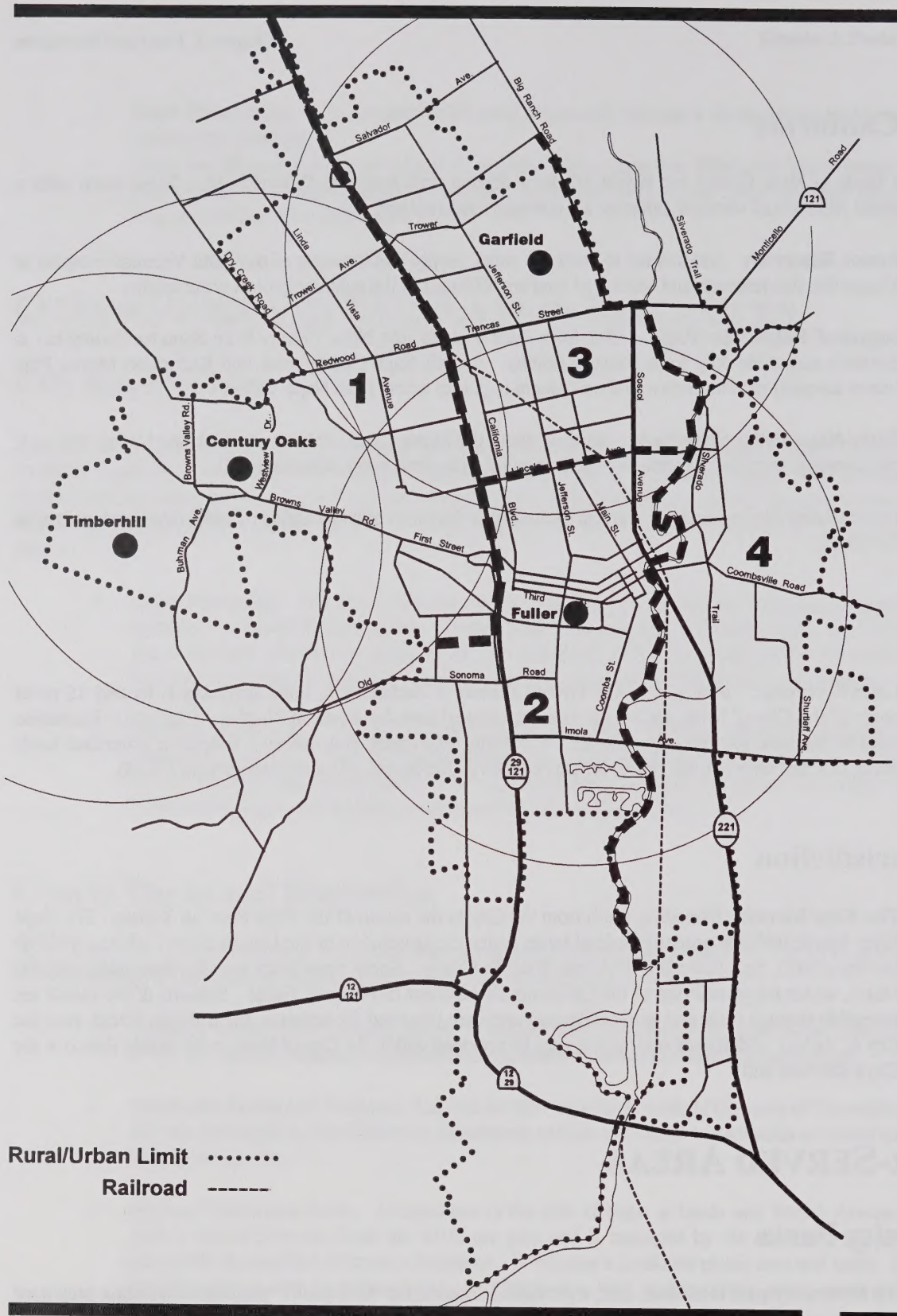
- **The Napa Marsh:** Extending south from the City to the mouth of the Napa River in Vallejo. The Napa River Marsh includes primarily federal lands under the jurisdiction of the United States Fish and Wildlife Service (FWS), San Pablo Bay National Wildlife Refuge. Some State lands are also associated with the Marsh, under the jurisdiction of the California Department of Fish and Game. Portions of the marsh are accessible through trails and some additional areas are proposed for access at the Cullinan Ranch near the City of Vallejo. Additional marshlands may be provided within the City of Napa at the Stanly Ranch at the City's southern end.

UNDER-SERVED AREAS

Community Parks

The function of a community park is twofold: first, it provides a location for "community" recreation including organized sports, group activities, and special events; second, it serves as the recreational focus for a "community".

Service areas are large (1 1/2 - 2 miles) because community parks by their size and facilities can serve a greater number of people. People are expected to bicycle, drive or take transit for the recreation opportunities offered in the park. To serve as a community focus, the standards also call for providing a community park in each major sub-area of the City, currently identified as "quadrants". Figure PR-2 shows the quadrants of the City and identifies the level of service for community



Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan

Parkquad.DS4

12/98

Figure - PR 2

Park Quadrants & Community Parks

North

725' 1/2 Mile 1 Mile 3 Miles

0

Geographic Sub-Area (Quadrants)

Community Park with Park Service Area (2-Mile Radius)

Source: City of Napa Community Resources Department

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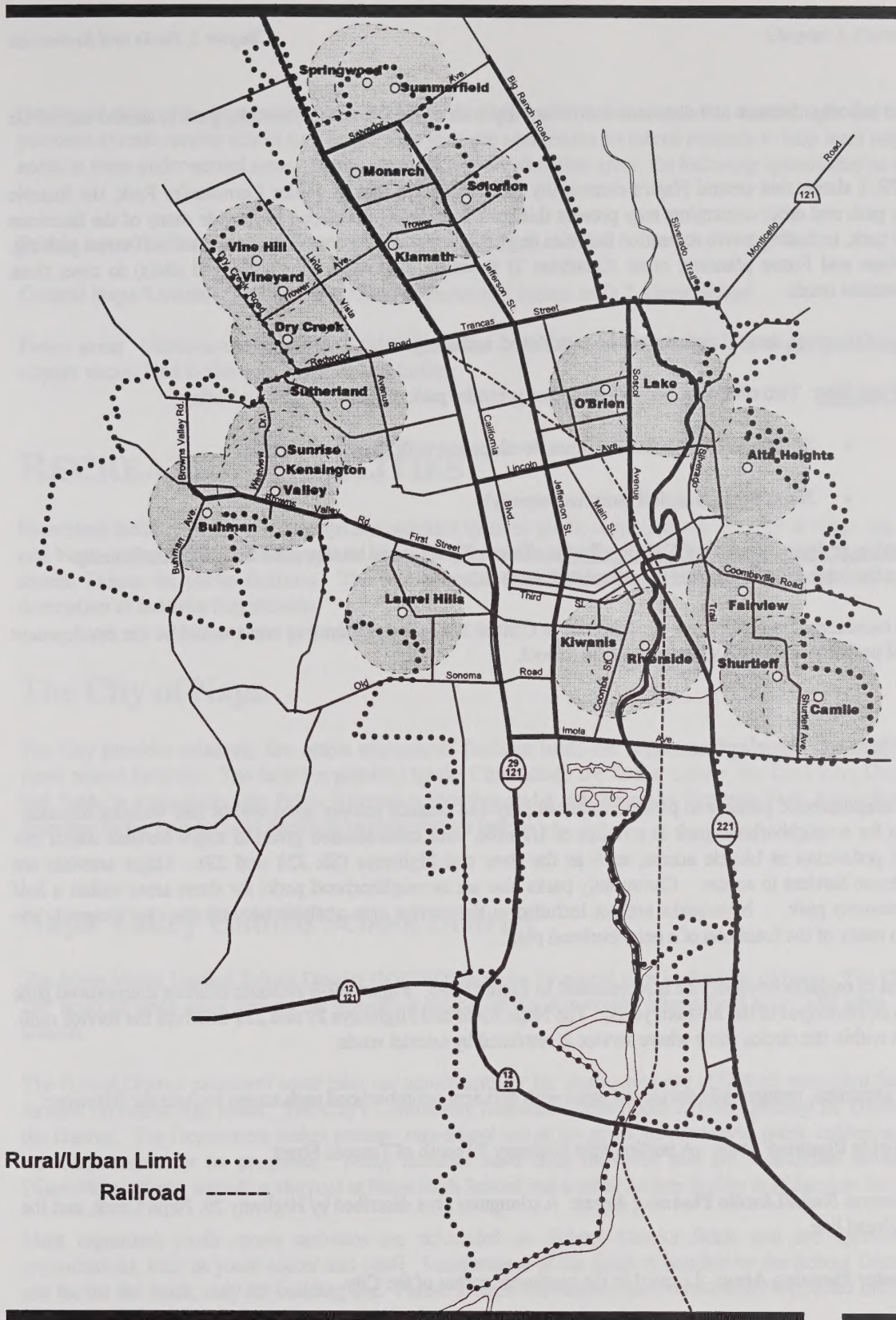

City of Napa General Plan | Parkrdis.DS4 | 12/98

Figure - PR 3

Neighborhood Park Service Area

North

725' 1/2 Mile 1 Mile 3 Miles

0

Neighborhood Park with 1/2-mile Radius Service Area

Source: City of Napa Community Resources Department

While every effort has been made to insure the accuracy of the information shown on this page, the City of Napa assumes no responsibility for liability from any errors or omissions.

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parks in relation to both a distance and distribution criteria. By both criteria, a new community park is needed east of the Napa River.

While Figure PR-2 shows that central Napa's community park needs are met by Fuller Community Park, the historic character of the park and other constraints may prevent this park from being developed to provide many of the functions of a community park, including active recreation facilities (e.g., ballfields) and a community center with off-street parking. The Central Napa and Foster planning areas (Quadrant 2) therefore may require an additional site(s) to meet these community recreation needs.

For the area east of the river, several options will be considered, including:

New Park Site: Two sites have been identified as potential park or joint-use sites, including:

- **Silverado Middle School** (joint development with the school district)
- **Napa State Hospital** (surplus property)

Expansion or Improvement of Existing Park: Shurtleff park could be expanded to include community-serving facilities with joint use of the adjacent Phillips School.

An option to be considered for community facilities in the Central Napa/Foster Planning areas would be the development of surplus school property, such as Ridgeview Middle School.

Neighborhood Parks

The purpose of neighborhood parks is to provide informal play and outdoor activity areas within safe walking distance. The service area for a neighborhood park is a radius of 1/2-mile, with consideration given to major barriers which can prevent or limit pedestrian or bicycle access, such as the river and highways (SR 221 and 29). Major arterials are considered moderate barriers to access. Community parks also act as neighborhood parks for those areas within a half mile of the community park. Mini-parks are not included in the service area analysis because they are generally too small to perform many of the functions of a neighborhood park.

The existing level of neighborhood service is represented in Figure PR-3. Figure PR-3 includes existing unimproved park sites expected to be developed in the next ten years. The Napa River and Highways 29 and 221 interrupt the service radii. Unshaded areas within the circles show where service is restricted by arterial roads.

As Figure PR-3 illustrates, residentially developed areas with deficient neighborhood park access include the following:

- **Pueblo Planning Area:** A portion near Highway 29 south of Trancas Street
- **Central Napa/Lincoln Planning Areas:** A triangular area described by Highway 29, Napa Creek, and the railroad line.
- **Foster Planning Area:** Located in the southwest corner of the City.

Other areas beyond the 1/2-mile service radius of a park include isolated pockets along the city-county boundary. Arterial streets limit access to some parks in and near the downtown area.

Developed areas of the community have limited vacant land available for new parks. Accordingly, the City may need to purchase or lease surplus school sites or establish joint use agreements on school property to help meet neighborhood park needs in these under-served areas. In regards to each of the identified areas, the following options may be available:

Pueblo Area: Utilization of the West Park Elementary School.

Central Napa/Lincoln: Utilization of Lincoln Elementary School or D.T. Davis School .

Foster area: Utilization of Ridgeview Middle School or Snow Elementary School. There may also be opportunities to acquire vacant land in this area as it develops further.

RECREATION FACILITIES

Recreation facilities in the City of Napa are provided by three public organizations: the City of Napa, the School District, and Napa Valley College. Many private organizations and businesses also provide some recreational facilities, but this section focuses on public facilities. The role of each of the public organizations is discussed below, followed by a description of facilities they provide.

The City of Napa

The City provides relatively few active recreational facilities itself, but organizes the use of, and sponsors activities in many school facilities. The facilities provided by the City include the Senior Center, the Las Flores Community Center, ball fields in some parks, the Pelusi Recreation Building and a golf course in Kennedy Park, Skate Park and others as described in the Recreational Facilities by Type section below.

Napa Valley Unified School District

The Napa Valley Unified School District (NVUSD) includes 19 school sites in the City of Napa. The District maintains 180 acres of grass areas around the schools, available to the community after school hours and when school is not in session.

The School District maintains some joint-use agreements for the community use of District recreation facilities, generally focused on non-school hours. The City's Community Resources Department has first priority for District facilities after the District. The Department makes primary non-school use of the gyms, tennis courts, pools, cafeterias, classrooms and multi-use rooms for its programs. Many facilities have been improved and are maintained through joint School District/City efforts, including the pool at Napa High School and a roller hockey facility at Ridgeview Junior High.

Most organized youth sports activities are scheduled on School District fields and are operated by non-profit organizations, such as youth soccer and t-ball. Maintenance of the fields is handled by the School District. There is no use fee for the fields, only for building use. Parent groups and leagues have traditionally supported the field use through provision of labor and equipment.

In 1989, a community organization was formed to sponsor maintenance and improvement of youth sports fields. The organization, "Fields for You," is a consortium of representatives of groups using school fields: the Parent Teacher Association (PTA), the School District, the Community Resources Department and the Parks and Recreation Commission.

While the NVUSD provides a wide range and large number of recreation facilities, availability is restricted to times of the day, week, or year when facilities are not in use by school sports programs. Competition for fields at certain times of year is quite heavy, resulting in evening games and tight weekend scheduling.

Napa Valley College

Napa Valley College is located west of Highway 121 at Streblow Drive, north of Kennedy Park. The college grounds include over 100 acres of recreational fields, courts, and facilities. A joint powers agreement with the City allows for shared use of specific facilities at the college. Current facilities are enjoyed by college students as well as the general public through programs organized by the college, the sports leagues and the Community Resources Department. Community use of college facilities is restricted to those times when they are not required for college programs.

Recreational Facilities by Type

Facilities operated by the City, NVUSD and NVC, include the following:

Swimming

During summer months, the City operates one(1) 25-yard facility and one(1) small youth instructional pool at Napa High School and two(2) smaller pools at Redwood and Silverado Middle Schools for swim lessons and recreation swimming. The City operates one(1) 50-meter pool at Napa Valley College for recreational swimming.

Youth Baseball Fields

The City leases 7 acres at Garfield Park to Little League which operates and maintains three(3) baseball fields. The City also offers a number of backstops throughout City parks for scheduled practice by youth sports organizations.

NVUSD operates four(4) regulation baseball fields on high school sites. Multi-use fields at middle schools provide three(3) baseball fields used by sports organizations as youth practice fields.

Napa Valley College has one(1) lighted baseball field that is rented to community sports organizations when not being used for college programs.

Softball Fields

Lighted Fields

City Community Resources (Parks) operates one(1) softball field at Kennedy Park for adult softball, and has a master plan to develop two(2) additional fields there. A youth softball field at Kiwanis Park is used primarily by the Napa Girls Senior Softball League. Napa Valley College leases three(3) lighted softball fields to the City for adult softball game use.

Unlighted Fields

City Community Resources has four(4) multi-use fields which include backstops for informal play.

NVUSD operates four(4) regulation softball fields on high school sites. Multi-use fields at elementary and middle schools provide 48 softball fields used by sports organizations for practice and games.

Football/Soccer Fields

The City provides one(1) soccer field at Kennedy Park September - March; informal soccer can be played on the five(5) multi-use fields at neighborhood and community parks.

NVUSD operates four(4) football fields and (9) soccer fields on middle and high school sites; there are also (19) soccer fields located on the elementary and middle school multi-use fields.

Napa Valley College has one(1) football field and one(1) soccer field.

Tennis

The City owns two(2) tennis courts at Las Flores Park and works with NVUSD to maintain eight(8) public courts at Vintage High School.

NVUSD provides 34 courts; four(4) courts at Napa High School are lighted. NVC provides eight(8) unlighted courts.

Basketball

There are three(3) full courts, and six(6) outdoor half courts at neighborhood parks for informal play. NVUSD provides five(5) indoor courts in gyms. There are outdoor courts on all school sites, totaling 110. NVC provides one(1) indoor and twelve(12) outdoor courts.

Volleyball

The Las Flores Community Center can accommodate two(2) indoor volleyball courts. There are five(5) outdoor volleyball courts at City parks. The five(5) NVUSD gyms accommodate volleyball play. NVC provides one gym that can accommodate indoor volleyball play.

Roller Hockey

The City converted a former tennis court area at the old Ridgeview Junior High School into a roller hockey area through a joint agreement with the NVUSD. The City operates roller hockey leagues for youth at this site throughout the year.

Track/Jogging

The City includes trails or jogging paths at six parks. NVUSD provides five(5) tracks at middle and high schools. NVC provides one track and one jogging trail which runs around the campus and along the City's Napa River Trail.

Play Apparatus

The City provides twenty five(25) play areas on city parks. Nearly all sites with active recreation include play equipment. Fourteen elementary school sites include play equipment.

Community Centers

The City Community Resources Department operates the following:

- **Las Flores Recreation Center:** The 8,700 square foot Las Flores Recreation Center in Las Flores Park includes a 5,000 sq. ft. gym and multi-purpose room with room for expansion to four classrooms. A kitchen, office and restrooms are included in the Center.

- **Senior Center and Annex:** The 7,300 square foot Senior Center, located on Jefferson Street houses senior activities, including meetings for over 30 clubs and senior information and referral services. The 1,600 square foot Senior Center Annex, adjacent to the Senior Center, is used for recreational and senior programs.

- **Pelusi Recreation Building:** The 1,600 square foot Pelusi building is located in Kennedy Park, and includes space with a meeting room, kitchenette, and restrooms. The building is used for recreation programs and can be rented to private or non-profit groups.

- **Fuller Park Junior Museum Building:** The former Junior Museum Building in Fuller Park is leased to the Headstart program and is used for recreational pre-school programs when not used by Headstart.

NVUSD and NVC make school classrooms and facilities available for community classes, meetings, and events. Community Resources make use of these facilities for several classroom programs.

The 30-acre, State owned Napa Exposition (formerly Town and Country Fair) site includes four exhibition halls, a grand stand, livestock barns and a site for bike and track events. The City, non-profit and private groups make use of these facilities (for a fee) for various events.

Golf

The City owns an 18-hole, 140-acre public course at Kennedy Park which includes a pro shop, snack shop, restaurant area, putting green and driving range. The course is leased to a private operator.

There are six private courses within 10 miles of the City:

- **Vineyard Knolls:** A 9-hole private course 4 miles west of Napa.

- **Chimney Rock:** A 9-hole public course north on Silverado Trail.

- **Meadowood Resort:** A 9-hole private course east of the town of St. Helena.

- **Napa Valley Country Club:** An 18-hole private course east of the City.

- **Silverado Country Club:** A residential neighborhood and resort facility located just to the east and north of the City and includes two semi-private 18-hole courses.

- **Chardonnay Club:** An 18-hole public course on Jameson Canyon Road just south east of the City.

Boating

The City provides boat facilities at Kennedy Park, Main Street Landing (4th Street Boat Dock) and Lake Hennessey. Milliken Reservoir is not currently open to the public. There is a County boat launch and private boat facilities at Cuttings Wharf. Lake Berryessa, 15 miles north of the City, provides numerous boating opportunities.

Horse Facilities

The 157-acre Alston Citywide park includes horse trails. Skyline Park, the 850-acre privately managed County Park just east of Napa, includes extensive riding trails.

Private horse facilities include the Wild Horse Valley Ranch east of the city of Napa which includes 3000 acres of riding trails, two arenas, and riding instruction; the Oak Leaf Ranch Training Stables; and the Silverado Equestrian Center.

CITYWIDE TRAIL SYSTEM

In 1994, the City Council recognized the recreational and transportation benefits of a citywide trail system and requested that staff undertake a study and make proposals for a comprehensive, multi-use trail network. The Parks and Recreation Commission appointed a Trails Advisory Subcommittee to assist staff in the planning process. The background research, goals and policies developed as a result of this effort were incorporated into the "Draft Napa Citywide Trails Plan" (Consultant, Barbara Kent Stafford, July 1995). Instead of adopting these policies in a separate plan, the information in the draft Citywide Trails Plan has been incorporated into the General Plan.

Existing Hiking and Bicycling Trails

A number of pedestrian trails are within existing parks, as described in previous sections. Parks with extensive trail systems include Alston, Kennedy and Westwood Hills. In addition, the privately maintained (County-owned) Skyline Park includes an extensive system of walking trails. The City has also acquired and partially developed portions of a trail along the Napa River, and is proposing trails along the Salvador Channel and at the Stanly Ranch. Several major multi-use (bicycle and pedestrian) trails are in various stages of planning and implementation within the City.

Existing City Plans for Trails

Recent park and urban planning studies prepared for the City of Napa have emphasized the need for integrating trails into the urban design of the City. The City, County and Regional trail planning efforts that influence trail planning in the City are discussed below.

The Napa Parks and Recreation Master Plan

The Napa Parks and Recreation Master Plan (Wallace, Roberts and Todd, March, 1992), looked at the overall need for recreation in the City. It recognized the significance of the River Trail and recommended further development of trails in the City. The Plan identified the Napa River's tributary creeks as potential trail corridors.

The Napa River Trail Concept Plan

The Concept Plan for the Napa River Trail (prepared by Rivers, Trails and Conservation Assistance Program, National Parks Service, 1991) identified the location for continuous trails along the entire length of the Napa River within the City. Implementation of the plan is ongoing with several segments constructed and more in the design stage. The Plan developed trail design and management guidelines, and implementation strategies for establishing and funding the trail. The Napa River Trail is considered an element of the citywide trail system. The design, management and implementation strategies developed by the Trail Concept Plan will also apply to other segments of the citywide trail system where appropriate.

Napa Urban Waterfront Restoration Plan (NUWRP)

The NUWRP is one element of an overall plan for better access to the Napa River envisioned in the Napa River Trail Plan. The NUWRP focuses on proposed public access and trail improvements in the downtown area of the River from near sixth street to just north of the Oxbow. It includes trail improvements along the river, fishing and observation piers, and other elements. Enhancement measures include pedestrian access to the river side and incorporating the river into the design of the public open spaces of the City. (NUWRP, City of Napa and California Coastal Conservancy; Sasaki Associates, Consultants; December 1990)

Flood Control Project

The U. S. Army Corps of Engineers has been planning for flood control for the Napa River through the City for several decades. The Napa County Flood Control and Water Conservation District, the local project sponsor, in March 1995 released a General Design Memorandum and Draft Environmental Impact Statement/Environmental Impact Report on the plan. This plan contains a recreation element which considers the NUWRP and The River Trail. Sections of the River Trail on the east bank of the river may not be feasible if the 1995 Army Corps project design is implemented as proposed.

Concerns over the 1995 Corps design were expressed by the Napa Community and by Federal and State Agencies concerned with the environmental consequences of the design. As a result, a coalition of jurisdictions and interest groups has been formed to re-evaluate the problems of Napa River flooding and to present alternative solutions to the Corps' design. A river trail will continue to be a fundamental ingredient in any future flood control design solution.

Big Ranch Specific Plan

Planning for this area includes provision for a trail along the Salvador Channel. Final decisions on trail alignment and the environmental impact of the trail in this area will be covered by the Specific Plan and its EIR. The Big Ranch Specific Plan and EIR were undergoing public hearings at the time of preparation of this document (September 1996).

Stanly Ranch Specific Plan

The Stanly Ranch is located at the southwestern tip of the City adjacent to the Napa River tidal marshlands. A specific plan has been proposed to allow the development of a resort residential community including golf course, hotel and homesites. A trail through this area is proposed from Highway 12/29 to Cuttings Wharf. Final decisions on trail alignment and the environmental impact of the trail in this area will be covered by the Specific plan and its EIR.

Commuter Bicycle Path

The City Public Works Department has received a grant to construct a bicycle path running from Napa Valley Corporate park to Trancas Street, potentially along the existing tracks of the Wine Train.

Napa County Trail Plans

Napa County General Plan (1983)

The County General Plan includes a policy to promote non-motorized riding and hiking trails (Open Space Element) integrated with facilities in the incorporated cities of the County (Circulation Element). It also calls for implementation of the Napa County park and Recreation Master plan.

Napa County Park and Recreation Master Plan (1977)

This plan shows a county-wide trails system; however, there has been no recent action to implement this plan.

Skyline Wilderness Park

This 850 acre park is located in the county adjacent to the city of Napa. It is leased from the State by the County and developed, operated, and maintained by the Skyline Park Citizens Association, a citizen non-profit group. Located at the south eastern boundary of the City, the park includes hiking and equestrian trails. A dedicated portion of the Bay Area Ridge Trail runs through the Park.

Regional Trails

The Bay Trail

The Bay Trail is a project sponsored by the Association of Bay Area Governments (ABAG). the State of California mandated a plan for this "Recreational Ring around San Francisco Bay". The Bay Trail covers a distance of approximately 400 miles, linking the counties surrounding San Francisco and San Pablo Bays. The goal of the trail is to *"develop a continuous trail which highlights the wide variety of recreational and interpretive experiences offered by the diverse bay environment and is situated as close as feasible to the shoreline, within the constraints defined by other policies of the plan".* (The Bay Trail, Planning for a Recreational Ring Around San Francisco Bay; ABAG, July 1989.)

Currently the Napa County segment of the Bay Trail is shown as an on-highway route. It enters Napa along Highway 29, turns north on Soscol Avenue, west on Imola Avenue, north on Freeway Boulevard to leave the City west on Old Sonoma Road. It turns south toward the Bay on Duhig Road. Within the City, the trail is considered transportation link as well as a regional recreation route.

The Bay Area Ridge Trail

The Bay Area Ridge Trail is a project of the Bay Area Ridge Trail Council, a non-profit trail advocacy organization. The goal is a 600 mile multi-purpose trail around the ridges of the San Francisco Bay. The trail route through each county is proposed by the respective county's local committee. Napa County recently recommended its corridor which is to connect a point in Solano County to Sugarloaf Ridge State park in Sonoma County. A portion of the trails in Skyline Park are dedicated as part of the Ridge Trail, bringing the trail into Napa. The Ridge Trail is proposed to connect to the River Trail thence to the western edge of town.

Town of Yountville Bikeway Plan

The Town of Yountville, seven miles north of Napa, has adopted a Bikeway plan. The Plan includes a proposal for a regional system and a local bikeway system. The regional system provides a rout through the town for bicyclists touring the Napa Valley. The local bikeway system is designed for a more leisurely pace of travel and links the various destination points in Yountville along a diversified and scenic route. (Yountville Bikeway plan, Town of Yountville, 1982.)

Napa River Trail

This trail was previously described in a previous section describing Citywide Parks, Open Space and Trails. In summary, a multi-use trail is planned from the Stanly Ranch to Trancas, with links to proposed regional (Bay Trail and Ridge Trail) and other City trails.

The Bay Trail

A regional hiking and bicycling trail around the perimeter of San Francisco and San Pablo Bays is being planned by the Association of Bay Area Governments as part of a State sponsored program. When completed, the Bay Trail will connect more than 90 parks and publicly accessible open space areas. Although a route has not been firmly established in Napa, one alternative locates the trail near the Cuttings Wharf area entering the City of Napa on Old Suscol Road through the Stanly Ranch to Stanly Lane and then onto Foster Road where it would connect with Imola, cross the river and proceed through Kennedy Park to the Napa-Vallejo Highway. Connector trails are proposed along Highway 29 and American Canyon Road. Alternatively the trail could use Old Sonoma Road from the Carneros District leading to Imola. One of the City's goals is for the Trail to interface as closely as possible with the Napa River Trail.

San Francisco Bay Area Ridge Trail

A Ridge Trail sponsored by the Bay Area Ridge Trail Council, a non-profit organization encompassing representatives from public and private organizations, is planned as a 400-mile trail along the ridgelines of the hills and mountains surrounding San Francisco Bay. With planning beginning in 1988, the Ridge Trail will follow existing trails where possible, connecting them by using public lands or public access easements. In the North Bay, plans are for the Ridge Trail to run from Sugarloaf Ridge State Park in Sonoma, through Napa County and the City of Napa and then through Skyline Park to Solano County. The exact alignment through Napa County has tentatively been determined to be a loop trail on both the east and west ridges of the Valley.

CULTURAL AND ARTS ACTIVITIES

Organizations

Arts Council of the Napa Valley

The Arts Council of the Napa Valley (ACNV) was established in 1980 as a non-profit membership corporation to support and provide programs for the literary, visual and performing arts in Napa County. The ACNV accomplishes it's goals by:

- Promoting and supporting the artistic community;
- Providing arts education in the schools;
- Creating and enhancing public access to and awareness of arts.

Other Arts and Cultural Organizations

The Arts Council publishes a calendar of art, film, and theater events in their bi-monthly ArtSCAN newspaper and receives funding from individuals, community businesses, foundations, corporations, and other organizations. Member organizations include:

Sharpsteen Museum, 1311 Washington St., Napa 94515
Artists Progressive League, 1600 Sierra Avenue, Napa 94558
Napa Valley Art Association, 273 Stonecrest Drive, Napa 94559
Napa Valley College Fine and Performing Arts Department
Napa Valley Symphony, 2407 California Blvd., Napa 94559
Napa Valley Opera House, 1144 Main St., Napa 94559
Napa Valley Music Associates, 1634 Santiago Ave, Napa 94558
Dreamweavers Theater, 101 South Coombs, Suite P, Napa 94559
Napa Valley Gallery Association, 1130 Main St., Napa 94559
Dixieland Jazz Society, 1006 Mustang Road, Napa 94558
National League of American Penn Women
Jarvis Conservatory, 1711 Main St., Napa 94559
Not-for-Profit Arts Group, 1627 Meek Ave., Napa 94559
Arts Council of Napa Valley, 101 South Coombs, Suite D, Napa 94559

The Napa Chamber of Commerce produces an annual, 8-page "Calendar of Events" that is available to the public at 1556 First Street in Napa (226-7455) The events listed in the Chamber publication occur county-wide, and include sports, lectures, theme festivals, theater and art. For the months of 1996, the cultural activities include: The Arts Council's lecture series (various locations); classical concerts at the Robert Mondavi winery, the Villa Encinal winery, chamber music in the Napa Valley; theater performances at Napa Valley College, at local high schools, Pacific Union College and at Dreamweavers Theater; Napa Valley Symphony series; Opera and Zarzuela Festival at the Jarvis Conservatory; annual Jazz Festival at Veterans' Park; Napa Valley Chorale concerts; Shakespeare Festival at the Charles Krug winery; the Napa River Festival; the annual Napa Wine and Crafts Faire; and the annual Napa Valley Music Festival, among others.

Napa Valley Exposition

The Napa Valley Exposition currently sits on a 125 year old site that has been used for public festivals, fairs, and celebrations throughout it's history. The facility currently sits on a 34 acre site just east of Downtown Napa between Silverado Trail, Soscol Avenue and Burnell and Third Street. The property became part of the state of California's District Agricultural Association Fairs in 1928 and has served as the primary event center for the City of Napa and its agricultural surroundings.

The Exposition hosts trade shows, local celebrations, events associated with the school districts and private parties and meetings in addition to the annual August Town and Country Fair. Facilities include over 60,000 square feet of showroom space in five exhibit buildings, many equipped with full commercial kitchens. The grounds include a vineyard and demonstration garden and livestock barn.

End of Chapter 5.

CHAPTER 6
HISTORIC PRESERVATION

INTRODUCTION

This background chapter provides details and data references related to the historic preservation. A summary of the historic settlement of Napa, a detailed definitions of the historic architectural styles prevalent in the city, and a brief biographical background of the city's prominent architects and builders is followed by discussion of the City's efforts in historical preservation and a description of the historic properties surveys that have been conducted and the conclusions that have led to recommendations for future preservation programs. The chapter also provides a synopsis of archeological resources within the city.

HISTORIC RESOURCES

Historic Settlement of Napa

The First Inhabitants

Imagine a time long, long ago, when people first came to live in the place we now call Napa. Soon after the Ice Age, these people were part of the westward migration to the west coast from the central plains. Finding a hospitable climate, they settled along the river near vast marshes teeming with fish and wildlife. Then, as now, Napa was a gourmet paradise. Residents feasted on a rich diet that included grains, plants, abundant fresh water shell fish, salmon, fowl, game and tasty seasonal berries.

The first inhabitants, who called themselves "Onasatis," The Outspoken People, chose to live in these lush temperate inland valleys near abundant sources of food, fresh water and valuable trade goods, such as obsidian from Glass Mountain. The more recent Native Americans, who spoke an entirely different language, settled along the bay marshes nearby. An extensive network of trails connected the various Native American groups and trading became a great opportunity for social interaction. Anthropologists tell us that the first people, called the Wappo, anglicized from the Spanish "guapo" meaning handsome or brave, spoke an ancient language known as Yukian. Although territorial boundaries changed over time, their southernmost settlement was probably located at the end of the tidal reach of the Napa River at the intersection of two major trails, one extending from the inland valleys to the coast and the other leading from the north to the bay. Portions of these trails underlie Monticello Road and Silverado Trail. At the confluence of Napa Creek with the Napa River, people from the Penutian language group settled in a town they called Tcimenukme. On the eastern side of the river, the Patwin, another Penutian language group, occupied two major villages at Tulukai and Suscol. The original Napans lived in the vicinity of modern Napa until the early 1800s.

The Colonial Period

Less than two hundred years ago, the native people's Napa paradise was changed forever by western civilization. In June of 1823, a reconnaissance party arrived at Napa Creek, looking for a new mission site that would solidify Mexican claims to the north bay and to ward off the possibility of Russian expansion from Fort Ross. Diary entries noted the rich agricultural resources in the vicinity. When Spain ceded Alta California to Mexico, ending the imperial period, local ranchos assumed authority from the overextended Mexican government. In sharp contrast to the Native American value system, the colonial system was based on land ownership and dominion over nature. Many of the Native American people recognized that it was futile to resist the white invasion, but the warlike Wappo refused to give in despite overwhelming odds. In the end, imported diseases, vicious warfare, and the psychological effects of virtual enslavement decimated the native populations. Many of the survivors became workers on the Ranchos or disappeared into other cultures.

Spanish-Mexican Rule

The Spanish-Mexican period marked the beginning of a new era for Napa. Spanish diplomat Mariano G. Vallejo was sent to colonize the north bay region. Around what is now the City of Napa, most of the productive lands were controlled by Vallejo, his relatives and a few Anglo-American newcomers who became Mexican citizens in order to obtain land grants. In 1836, Nicholas Higuerra was granted Rancho Entre Napa, including the area west of the river southward from Napa Creek to the marshes. In 1838, Salvador Vallejo was granted Rancho Napa. His hacienda, named Las Trancas for the heavy bars of redwood logs that formed the gate to his rancho, is now gone but the name remains. In 1841, another of Vallejo's relatives, Cayetano Juarez, was granted Rancho Tulucay on the east side of the river. Cattle and sheep ranged across the unfenced ranchos. Shallow draft launches picked up hides and tallow at the Embarcadero on the river near the present main library to be shipped off to foreign markets on sea-going vessels laying at anchor in the bay. The Juarez adobe hacienda, built in the 1840s, remains as testimony to our California past on the roadway once traveled on foot by native people thousands of years ago.

California Enters the Union

News of Napa's rich agricultural potential spread. Speculators, traders and settlers began to trickle in. At first, the Californios welcomed the Anglos as potential partners in trade and customers for land speculation. But with the most productive agricultural lands controlled by the Californios under the land grant system, the immigrants moved in claiming squatter's rights. Land ownership conflicts grew, culminating in the Bear Flag Rebellion of 1846 when a group of land hungry farmers stormed General Vallejo's house. The Bear Flag Republic was short lived. In 1848, California entered the Union under a treaty which included protection of the Mexican land grants. This portion of the treaty was never enforced, much to Vallejo's despair.

19th Century Napa

In 1848, the town of "Nappa" began with the purchase of the northeast portion of the Rancho Entre Napa from Nicholas Higuerra, by Nathan Coombs, a local rancher and horse breeder. Coombs surveyed and staked a grid of streets and sixty-foot lots along the west bank of the Napa River. Located at the northern end of the most navigable reach of the river between the rich agricultural valley and the outside world, the site was ideal from a commercial standpoint. Coombs was successful in his land subdivision and sale. Napa's first building, a one-and-a-half story saloon, was built on the south side of Third Street near the river, followed by a general store at the foot of Main Street. Also in 1848, William Russell established a ferry service over the Napa River near Third Street.[1] The town's development would continue to depend upon water transportation.

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[1]C.A. Menefee, *Historical and Descriptive Sketch Book of Napa, Sonoma, Lake and Mendocino, comprising sketches of their topography, products, history, scenery, and peculiar attractions*, Napa, Reporter Publishing House, 1873.

Population

While the first woodframe buildings were under construction, news of the gold discovery reached Napa. Construction projects and lands were left behind as every able bodied man raced to the gold fields to seek his fortune. Many struck it rich, but many more returned empty handed. The new town became a haven for weary gold miners during the winter as well as a point of departure for the gold fields. Many of Napa's first inhabitants were a motley group, mostly men, including South Americans, Mexicans, Chinese, Europeans, North Americans and a few remaining Native American people.

Industry

Coombs' survey established Napa's commercial center along Main Street north of the River, with new industries located along its banks. In addition to shipment of agricultural products, the tanneries also made use of the river. By 1870, Sawyer Tannery moved to its present location, with eight men, four of them Chinese. The tannery compound contained "Chinese quarters" well into the 1880s.[2] Coal-fueled planing mills were gassified for lighting at a plant near the Embarcadero. The unlucky Chinese replaced the dwindling Native American populations as laborers in tanneries, mines and vineyards. Numerous stone walls and stone wine cellars attest to their contributions.

Many of the unsuccessful miners settled in Napa to work in agriculture, commerce and industry. Forests were felled on the surrounding hillsides to supply construction materials for Napa and the region. Many of our historic old buildings contain timbers and lumber milled of clear old growth redwood and fir no longer available. Lumber, grains, hides and tallow were loaded onto seagoing schooners tied up at piers along Riverside Drive replacing ballasts of coal and stone. Such ballast stone can be found in many foundations such as the Peruvian stone supporting the Finis Ewing Johnston house on Jefferson.

Over the next few years, bustling, busy Napa became the civilized heart of the valley and in 1851, the county seat. The first courthouse was built and by the early 1870's, plans were prepared for the third courthouse, which is still in use today, on land donated by Nathan Coombs. Impressive mansions built by early entrepreneurs faced the river along the southern extension of Brown Street. The town also supported a theater, a company of minstrels and musicians, a jockey club and other urban offerings. Between 1850 and 1870, steamboat transportation flourished. The railroad had arrived in Napa by 1858.

As Napa prospered, the town spread out in all directions along the west bank of the river. The original street grid was extended north and east, while a new grid oriented to the river extended south. Subdivisions included Cornwall's addition in 1852, six square blocks founded by the River, Napa Creek, Clay and McKinstry Streets, an industrial area plus a "China Town" at the confluence, with a two block "Spanish Town" bounded by Lawrence, Clay, West and Pearl Streets.[3] "Napa Abajo" was recorded in 1853, with a grid pattern that did not parallel the earlier street grid. The two grids met at Division Street. With only a half a dozen houses by 1861, it was not entirely filled for over 50 years.[4]

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[2]Lyman L. Palmer, *History of Napa and Lake Counties, California*, San Francisco: Slocum, Bowen & Co., 1881. Sanborn Map, 1886.

[3]"Survey, Cornwall's Addition to Napa City," County Recorder's Book B of Deeds, 143. Sanborn Map Company, "Napa City," 1886,

[4]"Plan of the Town of Napa Abajo in Napa County," County Recorder's Book D of Deeds, 110. U.S. Coast Survey, 1861. Sanborn-Perris Map Company, "Napa," 1901.

In 1857, Brown and Walker's Addition, southwest of Napa City from Second Street to Oak, set up the grid alignment that exists around Fuller Park. Cornwall and Hartson's Addition in 1857 bent that grid south of Laurel Street. Two more subdivisions, Alta Napa in 1866 and Lawley's Addition in 1868, continued Napa City north to Lincoln Avenue. The area west of Jefferson Street, north of Napa Creek, was created in 1872 by Spencer's Addition, and the East Napa subdivision, east of the river, occurred in 1873.[5] All of these 19th century street grids were in place by March 23, 1872, when a legislative act, incorporating the Town of "Napa City" as a general law city, was approved. Later, the town's name was officially changed to Napa. The first ordinances addressed road maintenance, street lights, fire protection and locally unacceptable land uses such as brothels and obscene shows. Napa matured from its rowdy early days into a good place to raise a family.

The valley's superb climate also attracted the interests of resort developers. The first railroad in the bay region was constructed to support a grand new resort at the northern end of the valley. Calistoga,"California's Saratoga", capitalized on the hot springs once enjoyed by the native people. By 1868, the railroad transported vacationers to "take the waters" as well as providing a dependable overland shipping link for products and goods. Napa's diverse economy included tourism, lumber, tanneries, leather goods and services associated with the agriculture such as wineries, distilleries and grain warehouses. Even today, the name "Nappa" on leather goods denotes a superior tanning process first developed here.

Frequent ferry service brought Napa within the influence of San Francisco and the growing commercial centers of the bay region. Napa's fine climate and economic opportunities attracted numbers of people. The population grew from 300 in 1852, to 1,800 in 1870, and, by 1880, to 3,730.[6]

Turn of the Century - Early Decades

By 1905, an interurban electric trolley carried passengers and freight from Vallejo to Calistoga. Trolley tracks ran up Soscol Avenue, turned west on Third Street, then north on what-is-now Jefferson Street, beyond the then-city limits. In 1906, after the earthquake destroyed much of San Francisco, Napa gained many new families seeking relocation to unaffected areas, never to return to San Francisco even after it was rebuilt. In 1914, Napa became a charter city by popular vote.

Napa's prosperity has frequently been affected by other natural disasters and world events. Although the wine industry has been an important part of the region's economy since the beginning of the historic period, deadly grapevine diseases such as Phylloxera, economic depressions, and prohibition in 1919 have dealt serious blows. Mare Island Naval Shipyard in Vallejo has been a major influence on Napa's growth and development, with housing constructed for its civilian and military personnel. When the bridge across the Carquinez Straits was finished in 1928, Napa's fate was permanently linked to that of the major metropolitan bay region and to the presence of the automobile. Numerous vehicular stone bridges were constructed throughout the area adding to an expanding system of improved roadways.

The Depression

In 1929, after a period of unbridled prosperity, a great economic depression gripped the entire world. In Napa, once grand homes were converted into apartments or used for various economic ventures. A downward spiral of the once resplendent historic neighborhoods began. Throughout the 1930s and early 1940s, new architectural styles were introduced that paid homage to speed and progress. Moderne and Deco style buildings were

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[5]W.A.Pierce, "Revised Map of the City of Napa," 1872

[6]Denzil Verardo and Jennie Dennis Verardo, *Napa Valley: From golden fields to purple harvest,* Northridge, Ca.: Windsor Publications, 1986.

interspersed throughout the old town, primarily as apartments, offices and commercial centers. Governmental efforts, including WPA projects, were not enough to turn the economy around and the Depression ended only when the United States and other nations set in motion their preparations for World War II.

World War II

Mare Island geared up to produce an endless stream of ships, and workers flooded into the region from all over the county to support the war effort. In Napa, Kaiser constructed a shipyard in order to build landing barges. New homes were hastily constructed to house employees and existing apartments were filled to overflowing. Napa's population doubled virtually overnight.[7] Shipyard Acres, built for Kaiser workers, no longer exists but several small subdivisions on the southern edge of town remain from the war period. A local company, Basalt, developed a modular system of concrete blocks designed for quick, cheap building construction and widespread use. The system was used locally for numerous Napa homes and structures.

Post-War

After the War, as the country retooled for peace and continued economic stability, the suburban shift began. By 1950, just after the War, the population of Napa numbered 13,600 living in the urban core. In the last 50 years, the population has increased almost sevenfold,[8] and the city spread out in a low density pattern across prime farm lands. New roads were constructed to connect the various parts of the city. Traffic was routed through old neighborhoods once designed for walking and horse drawn carriages. Strip commercial and major suburban shopping centers competed with the original commercial core downtown. By the 1970s, Napa joined the movement to modernize its downtown, losing many historic buildings in the process.

Future

Napa has a wealth of history to guide its future. As we envision the future of Napa, we may learn from those earlier residents who shaped the cultural landscape of the region, how to protect, preserve and enhance our unique historic urban landscape, for ourselves, and for future generations.

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[7]Napa's 1940 population was 7,740. By 1950, it reached 13,579. Source: U.S. Department of Commerce, Bureau of the Census, U.S. Statistical Abstract 1975.

[8]Napa's 1940 population (7,740) grew to 13,579 by 1950 Its 1990 population of 61,842 is 6.9 times that of 1940. Source: U.S. Department of Commerce, Bureau of the Census.

ARCHITECTURAL STYLES

Vernacular Architecture (1850 -1930)

"Vernacular" is a term for 19th and early 20th century architecture that is not a specific architectural style. They usually have simple shapes with little surface decoration and were constructed with locally available materials, such as wood framing. Many good examples of this style are found throughout the older sections of Napa. A "folk" type of architecture, these buildings were frequently built by the homeowners themselves or builders based on the needs and budget of the owners. Folk architecture is regional, and learned through non-written traditions passed on within a cultural group.

Vernacular Building Types

Gable Front: This type of house has one story, a front-facing gable roof, and often a full-width front porch. In Napa, these houses often have raised basements and some ornamentation from their periods of construction.

Gable Front and Wing: This type of house has an L-plan with one section having a side-facing gable roof and the other, a front-facing gable. A long porch sometimes appears on the front elevation. In Napa these buildings are not highly ornamented.

Hall and Parlor. A house of this type has one story and a side-facing gable roof. It is two rooms wide (hence the name) and one room deep. Extensions often appear on the rear. Napa has a number of examples, many of which have been altered somewhat. They are seldom ornamented.

I-House: This type of building is essentially a two-storied Hall-and-Parlor house. A full-width front porch is a typical feature. Napa has a few examples.

Pyramidal: Houses of this type have pyramidal roofs, that is, hipped roofs with equal sides. The original floor-plan is square, though rear extensions are common. The front elevation tends to be symmetrical. Only a few houses of this type were built in Napa.

Gothic Revival (1860-1870)

The Gothic Revival was frequently crenelated and fortress-like, but its local manifestations were largely limited to the more domestic image of the Gothic Revival cottage; a small building with steep gables and vertical emphasis, often with pointed arches at the windows and doors, drip sill moldings, and lacy jigsaw ornament. Ecclesiastical examples remain as well, such as the First Presbyterian Church on Third Street.

Italianate (1870-1885)

Italianate homes, inspired by those built in northern Italy during the Renaissance, have a formal appearance. Standard features include a bracketed cornice, hooded windows, and an entrance portico with narrow columns. Roofs are usually hipped with a low pitch. In Napa, they are never hidden behind false fronts. Examples abound in Napa, particularly in the Fuller Park/Napa Abajo area, and along Vallejo and Main Streets in St. John's.

Second Empire (1860-1880)

The Second Empire, of which there are only a couple of extant examples in the City, was a French import particularly popular with the wealthier segments of metropolitan populations. The distinguishing trademark of the Second Empire is the mansard roof. The building was otherwise normally Italianate in feeling. The Goodman Mansion, McClellan-Priest House, and the Williams Smith House, all City Landmarks, are exceptional examples.

Stick/Eastlake (1880's)

The Eastlake style evolved in combined response to public desire for more elaborate ornamentation and the vogue for furniture designed by the English decorator, Sir Charles Eastlake. Houses in this style are highly decorated. The defining "stick" characteristic is the application of plain wood as decoration. It is often seen in banded bargeboards and panels beneath windows. A square (rather than angled) bay window is also typical. turned wood elements, especially porch posts and balustrades, represent the Eastlake esthetic. Napa has an unusually rich collection of Stick/Eastlake houses.

Queen Anne (1890's)

In the 1880's, the Eastlake slowly transformed itself into the Queen Anne. Generally, the Queen Anne was softer, more bulbous than the Eastlake; slanted or rounded bays replaced the square bay, towers became less assertive. The ultimate Victorians, Queen Anne houses display multi-planed roofs, combinations of siding material, three-sided bay windows, and a profusion of applied decoration. With the Queen Anne came a porch that extended across most of the front elevation, and sometimes wrapped around to the side. Elaborate examples have a rounded tower. Perhaps because of a construction slowdown during the economic depression of 1893-98, relatively few Queen Anne dwellings appear in Napa.

Neo-Classical Revival (1900-1910)

The first of the new twentieth-century styles, the Neo-Classical Revival features shallow hipped roofs, simple shelf molding atop doors and windows, and front porches with Tuscan columns. Angled bay windows on front and side elevations are typical. Elaborate versions retain the irregularity of the Queen Anne and often feature a variety of siding types. Napa has mostly small-scale examples, some of which are highly ornamented.

Craftsman (1905-1915)

The second and more influential of the post-Victorian styles, the Craftsman uses gable roofs with overhanging eaves, exposed rafter ends, purloins, shingle siding supplemented by clinker brick, and simple details that gave a handmade appearance. A Craftsman house often emphasizes its horizontality with a front porch that stretches across the entire elevation. Single-story examples, "bungalows," predominate in Napa.

Another variation of the Craftsman theme, and a popular one in Napa is an attempt to fuse two seemingly incompatible images: the rusticity and casualness of the Craftsman with the urbanity and the formality of the Classical. Thus, there are bungalows with rustic materials but symmetrical facades, Classical ornament laid against unpainted wood, or railings and other detail which manages to evoke both styles simultaneously. With the bungalow, as with the Queen Anne and other 19th century styles, many builders got their plans or images from planbooks and simply overlaid the new fashion over the building types they had previously been accustomed to building. Examples are found on Seminary and Wilson streets in Fuller Park, and along Main, Yajome and Vallejo Streets in St. John's.

Shingle Style

Inspired by the "shingle style" on the East Coast and the "first bay tradition" in San Francisco, these residences are noted for their informality of design, as well as use of shingle siding and contrasting woodwork. Examples can be seen in Fuller Park, on Seminary Street.

California Bungalow

(1920-1930). This style takes the bungalow form (usually defined by twin front-facing gables) but not all of its detailing. Siding is stucco or horizontal board. Bricks are plain. Usually, a full-width porch, with a front door opening directly into the living room. The one decorative hallmark was a gable vent. The style achieved popularity in Napa after World War I, but soon lost out to period revivals.

Tudor Revival (1920-1940)

This style was one of the most common of the period revivals. Standard features are two or more fairly steeply pitched gable roofs, stucco siding, and multi-paned windows. Elaborate examples add half-timbering and brick trim. Napa has a sizable collection of Tudor Revivals, many quite simple in their detailing. Several can be seen along Brown Street in St. John's, and in Fuller Park along Palmer, Pine and Seminary streets.

Spanish Eclectic (1920-1950)

Houses in this style, another popular period revival, have a generic Spanish appearance. They are characterized by tile roofs (or roof coping), plain stucco siding, entry decks rather than porches, and arched windows with small panes. Napa has many examples, with the majority as single-story. Brown Street, in the St. John's area, has a high concentration of this style.

Moderne and Art Deco (1928-1935)

The major new design phase of the 1920's was the Moderne or Art Deco, which occurred in two quite separate phases; the Zig-Zag, and the Streamline. Both were concerned with the image of technology, the machine. The Zig-Zag Moderne was essentially a decorative mode, that expressed modernism through new materials and stylized ornament. The ornamental motifs were abstract and geometric, a fusion with the Classical image. The Zig-Zag Moderne was not numerically significant in Napa, but there are examples of well above average quality, such as the rear addition to the Old Bank of Napa/Bank of America on Brown and Second Streets and the Franklin Street Post Office.

Streamline buildings were primarily stucco, with curved corners, horizontal "speed" lines and metal railings. The image was that of the transportation machine of a hygienic and happy future which would erase all the troubles of the present. It was an escapist mode, a period style whose period was the future. Several examples appear in Napa, most notably, the Food City Shopping Center, built in the 1930s.

Postwar housing (1946-1950s)

After the Second World War, single-story ranch-style houses were constructed as well as gable-roofed homes and garages. By the late 1940s and into the 1950s, concrete block homes, often with corner windows, were popular. (See Glenwood subdivision, in the Spencer area.) A popular style in Napa were the homes built by Devita Construction, both pre- and post-World War II: Single story with almost square windows arranged in horizontal bands, an attached garage facing the street and topped by a second-story bedroom. Examples are found throughout Napa, most prominently in the South Fuller area along Sycamore Street.

NOTABLE ARCHITECTS, BUILDERS AND CRAFTSMEN

William Corlett

The Corletts moved to California from the Isle of Man, England in 1875. The father, William P. Corlett established a planing mill business. Son William H. Corlett was architect for the Manasse Mansion, 1886, Stick & Queen Anne Style; the A.G. Prouty House on 1801 First Street; Fagiani's building on 813 Main; the Plaza Hotel, built in 1910, at 840-844 Brown Street and a victim of development; the Center building on 816 Brown Street, 1904. Corlett & Sons were contractors for the Napa Masonic Temple, built in 1889 at a cost of $50,000, and for

the George M. Francis House, home of the long-time publisher of the Napa Journal. About William H. Corlett the reviews were glowing: "ever since his [William H.'s] arrival in Napa County, he has been an interested spectator to its development. In his line of business, he has paid special attention to architectural designing and he has furnished plans for the Napa High School building, Elks Hall, Martin's building, Schwarz and Charles Dryer buildings, besides many others in Napa. He has given special attention to residences, and among others we mention that of Frank Noyes, Captain Hatch, Hunter and others. He has served the city as a member of City Council three terms and eleven years as a member of the School Board. Married Cassie Greenfield in 1887".[9]

Ernest Coxhead

Active at the turn of the twentieth century (1890s-1910), Ernest Coxhead was a prominent San Francisco architect. In Napa, he constructed the Shingle Style house at 486 Coombs Street, known as "Cedar Gables." Ernest Coxhead's work "is synonymous with the Early Bay Area tradition of Shingle and Craftsman design. The shingle style building which incorporates elements of the classic orders with the English Tudor Revival Style popular in country residences characteristic of Coxhead's work".[10] Note: Cedar Gables was built for Edward W. Churchill and his wife Alice Ames by his father, Edward S. Churchill. Both father and son were bank officers.

Luther Turton

Napa's leading architect from roughly 1890 to 1920, Luther Turton was born in 1842 and died in 1925. He began his architectural apprenticeship with McDougall & Sons for several years until opening his own architectural office in Napa in 1877. By 1888, Turton relocated his office upstairs in the Hartson Building, and later, to 144 South Main. He built a residence at 1037 First Street, and then a Craftsman/Prairie School home at 1767 Laurel.

One of his first distinguished creations was the Semorile Building on First Street. He designed this beautiful Italianate building for Bartolomeo Semorile and his wife Emily. The building was completed in 1889. Other works included the E.R. Gifford House at 608 Randolph Street, in the Stick/Eastlake style, under construction from 1885 to 1895. In 1904-1906, he was principal architect and helped build the Migliavacca Building which stood on the corner of First and Brown until its move to Fourth Street to make way for the City/County Library. Turton was the architect for eight Napa Landmarks: the Goodman Library, the Semorille building, the Winship Building, the Noyes Mansion, the Old Napa Register Building, the Hackett House, the Andrews/Sanza House and the late Gothic Revival First United Methodist Church, under construction from 1910 until 1920. Other works include the York building and the George H. Francis house on First Street. One loss was the Schwarz Hardware Company Building on Main Street, which was damaged by the 1906 earthquake and replaced.[11]

Percy Devita

Percy Devita, active in the Napa Valley for 40 years, was head of Devita Construction. His firm was responsible for many of the pre- and post-World War II homes built in Napa. Devita was a native of Florence, Italy, who came to the United States in 1908 at the age of ten. After moving to Napa in 1917 to farm, Devita, his wife Agatha and to Napa in 1917 to farm, Devita, his wife Agatha and son Francis began Devita Construction. Devita homes are found throughout Napa, in the South Fuller area, as well as
central Napa locations in St. John's, Calistoga and Napa Abajo. Devita remained active after his retirement in 1974. He died in 1992 at the age of 94.

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[9]Gregory's History of Napa & Solano Counties.

[10]Historic Resources Inventory at Napa Library

[11]Mark Strong, Napa Valley, 1986-1924.

HISTORIC SITES AND BUILDINGS

Chronology Of Preservation Activities

The City of Napa has had an active preservation program for more than twenty-five (25) years. It began in the late 1960's, with the adoption of the Historic Preservation Overlay Regulations. More specific City policies and laws designed to protect, enhance and perpetuate structures, sites and areas contained within Napa's survey districts were developed in the 1970's. An increasing public awareness of historic preservation issues in the City of Napa resulted in the creation of an advisory board to advise City staff on historic preservation matters. Soon after, a community group, Napa County Landmarks, Inc., was established in 1974.

An initial survey of the city's historic resources was completed by Napa County Landmarks in 1978. It was a comprehensive survey that produced partial documentation, i.e., an address list of 755 historic resources, together with 188 California Department of Parks & Recreation Historic Resources Inventory forms (DPRs). Some of the DPR-documented properties became official city landmarks. Others received protection through historic preservation overlay zones.

In 1988, the City of Napa became a "Certified Local Government" (CLG) under the National Park Service's nationwide program of financial and technical assistance designed to preserve historic properties. Certified status enabled Napa to receive federal grants for historic surveys and National Register nominations.

Private support of historic preservation efforts includes the financial support for rehabilitation of historic buildings. In addition, Napa County Landmarks, Inc., a non-profit organization, is dedicated to historic preservation activities in both the City and throughout the County. The Napa County Historical Society, in downtown Napa, provides archival and resources for historical research.

A chronology of historic preservation activities undertaken by the City include:

JANUARY 1975:	Enabling legislation for the designation of Landmarks and Historic Districts, creation of Landmarks Preservation Advisory Board (Ordinance No. 2310).
MAY 1977:	:HP, an historic preservation combining zoning district to allow adaptive uses for structures of historical, architectural and engineering significance. (City of Napa Zoning Ordinance, Section 17.56.010.)
DECEMBER 1978:	The Napa County Historic Resource Survey provided a comprehensive survey of historic resources located throughout Napa County. Sites of landmark quality in the City of Napa and other cities were noted.
FEBRUARY 1979:	A City Council Resolution established an Historically Sensitive Area for Central Napa to address historic preservation and to preserve the special historic and architectural assets of the area. Regulations for this area require that *all staff reports for planning permits within the City of Napa shall include a discussion of the potential impact of the project on the historic, architectural or preservation assets of the immediate neighborhood.* (City of Napa Resolution No. 79-22.) This Resolution also directed the Planning Commission to prepare an Historic Preservation Element with policies for the City.
1979 & 1980:	City utilized Community Development Block Grant funds for a low interest loan/grant program for historic structure renovation.

FEBRUARY 1986:	City Council created the Cultural Heritage Commission (Zoning Ordinance Section 15.52.030), assuming most of the responsibilities of the Landmarks Preservation Advisory Board; two members of Cultural Heritage Commission were added to the Design Review Board to review development proposals affecting historic structures and/or districts.
1987:	City establishes the "Certificate of Appropriateness," to be approved or denied by the Cultural Heritage Commission for a permit to construct upon or alter a designated landmark site, or property in an historic district, as well as for removal or demolition of an historic property. (City Council Resolution 87-156.)
1988:	The Calistoga Avenue Historic District is created. (City Council Resolution No. 88-67) An update of the 1978 Master List was conducted, but never adopted.
JUNE 1994:	The Fuller Park Survey provides detailed information on over 200 properties within that neighborhood, including documenting its potential as an historic district.
OCTOBER 1994	The Citywide Historical Resources Survey was conducted of the City's center core, visually evaluating structures built on or before 1951. Each building was assigned an estimated year of construction, and rated for its visual quality, its structural integrity, and its potential as an individual Landmark, a National Register property, or as a contributor to a local district.

Napa County Historic Resources Survey

In 1978, Napa County Landmarks, Inc. concluded a comprehensive historic resources survey of all incorporated and unincorporated areas in Napa County. The survey was intended to provide information for local preservation planning, as well as become a part of the State of California Inventory of Historic Resources. It was funded by the State of California Office of Historic Preservation, the City of Napa, and Napa Landmarks. The survey project was guided by Dan Peterson, A.I.A. architect and coordinated by Judith Munns, the survey director hired by Napa Landmarks. The City of Napa Planning and Community Development staff assisted with field work and historic documentation. Volunteers participated actively in the survey.

The survey's scope was to identify a representative listing of buildings, structures and places that have architectural and/or historical significance. The identification process took into account a property's local historical association; maintained a mixture of building periods and types to present a balanced view of the County and its communities; and pinpointed properties and districts which appear to meet the criteria for inclusion in the National Register of Historic Places.

The Napa County Historic Resources Survey incorporated 154 historic and architecturally significant sites in the County that were identified in 1974-75 by the Historic Preservation and Heritage Committee (a Napa County citizen committee). While these two phases of the survey compiled much data in a comprehensive manner, a caveat was added to the inventory that other significant properties remained to be discovered and documented within Napa County and its cities, and that they should be added to the inventory.

Inventory Criteria used in the 1978 Survey

All buildings, structures and places were first recorded on a Master List. Sites were then included in the Inventory according to the California State Office of Historic Preservation's basic criteria. A site had to meet one or more of the following criteria to be included in the Inventory:

1. Buildings, structures or places, including landscaping, that act as focal or pivotal points important as a key to the visual quality or character of an area, neighborhood or survey district.

2. Have an association with historic figures.

3. Illustrate an architectural type or period and/or represent the works of known architects, craftsmen or builders.

4. Illustrate the development of American architecture locally, regionally or nationally.

5. Relate to distinctive cultural or ethnic groups.

6. Remain in original condition and illustrate a given period.

7. Be unique in design or detail.

8. Serve as an example of an architectural period or style.

9. Illustrate a building type such as factories, railroad stations or shops.

10. When several buildings were of equal architectural interest, the one with the most known history was listed on the Survey.

11. Priority given to identifying and recording significant structures threatened with demolition or alteration.

Buildings, structures and places included in the inventory were further evaluated using the criteria of the National Register of Historic Places (NR). Some properties were already on the National Register or had an application pending. Others appeared to meet the criteria of the National Register at a local, state or other national level of significance, or warrant further study for such a listing. Two districts were nominated to the National Register from the inventory. Due to limitations of time, many properties on the Master List could not be researched for inclusion in the inventory at that time, but were recommended for future inclusion. The Master List properties are significant and were to be considered in conjunction with Inventory and National Register sites in defining historic districts.

Methodology

The City of Napa was divided into nine (9) survey districts based upon historical survey boundaries and the City's growth pattern (Figure HP-1 : Historic Resources Inventory Survey Districts). A brief historical context statement was written for each district. District maps outlining the location of inventoried Master List sites were included in the survey report with each district. State Historic Resources Inventory forms with photographs for each site were attached.

Volunteers conducted the actual survey, not only to make the effort affordable but, more important, to involve citizens who could add to the historical record in succeeding years. While a number of written sources were consulted for historical data, the primary information for the Inventory was obtained in oral interviews with local citizens and historians. This positive experience indicated the need for an extensive oral history program in the County.

1988 Master List Update

In 1988, a field survey, conducted by a volunteer historic preservation graduate student supervised by the Napa Landmarks Advisory Board, catalogued over 400 additional historical resources for the Master List. However, this inventory was never brought to the City Council for adoption.

National Register Properties

Within the city limits, there are 31 properties listed on the National Register of Historic Places, and one State of California Historic Landmark (the First Presbyterian Church). See Table HP-1 and Figure HP-2 : *National Register Properties in the City of Napa.*

City Landmark Properties

In addition to National Register and State Landmark properties, there are 54 properties that have been given a local landmark designation by the City pursuant to the provisions of the city's preservation ordinances. These properties were found to have special character or special historical, architectural or aesthetic interest or value as a landmark. Most are associated with historically significant Napa families or individuals. Others are designated based upon their architectural integrity and uniqueness (See Table HP-2).

City of Napa General Plan | Master.DS4 | 12/98

Figure - HP 1

Master List Survey Districts

North

725' 1/2 Mile 1 Mile 3 Miles

0

1 - Downtown
2 - Napa Abajo
3 - St. Johns
4 - Spencer
5 - West Napa
6 - East Napa
7 - Calistoga
8 - Alta Heights
9 - Fuller Park

Source: City of Napa Planning Department

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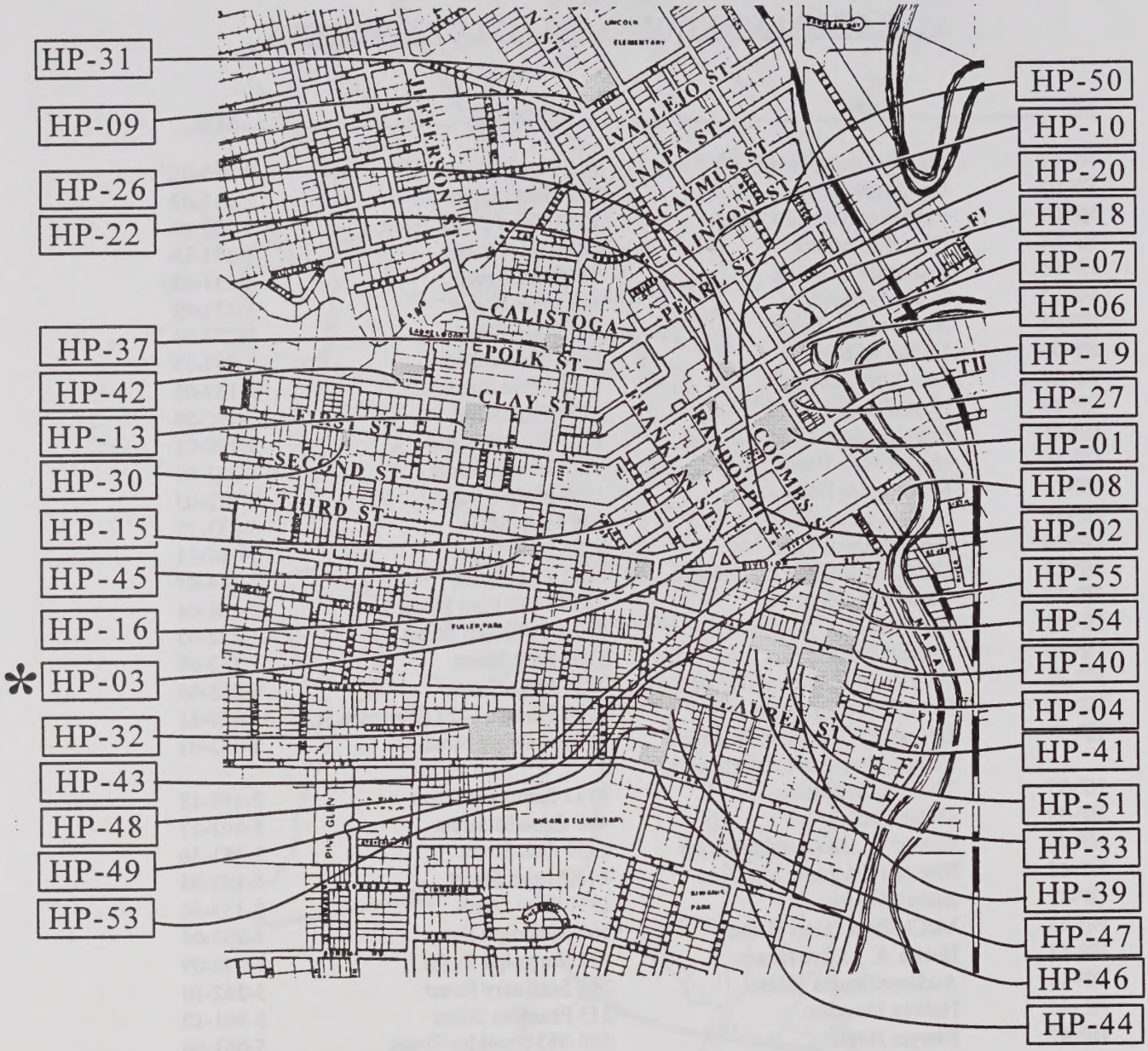
Table HP-1
CITY OF NAPA NATIONAL REGISTER PROPERTIES

File	Name	Address	APN
HP-01	County Court House	825 Brown Street	3-215-01
HP-02	Goodman Library	1219 First Street	3-211-02
HP-03	First Presbyterian Church	1333 Third Street	3-209-04
HP-04	Churchill Manor	485 Brown Street	5-101-19
HP-06	Semorille Building	975 First Street	3-231-02
HP-07	Winship Building	948 Main Street	3-231-01
HP-08	A. Hatt Building	550 Main Street	3-277-01
HP-09	Lisbon Winery	1720 Brown Street	3-062-15
HP-10	Sam Kee Laundry	1245 Main Street	3-137-03
HP-13	Noyes Mansion	1750 First Street	3-192-05
HP-15	Franklin Street Post Office	1351 Second Street	3-208-01
HP-16	Migliavacca House	1473 Fourth Street	3-261-01
HP-18	Napa Opera House	1018 Main Street	3-172-03
HP-19	Bank of Napa Building	903 Main Street	3-221-12
HP-20	First National Bank	1026 First Street	3-167-11
HP-22	Old Napa Register Building	1202 First Street	3-164-05
HP-26	Gordon Building	1130-1146 First Street	3-166-04
HP-27	Plaza Hotel	840-844 Brown Street	3-222-01
HP-30	Hackett House	2109 First Street	2-152-06
HP-31	Dr. Edwin Hennessey House	1727 Main Street	3-062-30
HP-32	Eliza G. Yount House	1790 Pine St. (423 Seminary St.)	5-021-11
HP-33	George E. Goodman, Jr. House (Winchester Arms Apartments)	492 Randolph Street	5-053-01
HP-37	Thomas Earl House	1221 Seminary Street	3-152-13
HP-39	Cedar Gables	486 Coombs Street	5-101-17
HP-40	George E. Goodman Mansion	1120 Oak Street	3-281-16
HP-41	Emanuel Manasse Mansion	443 Brown Street	5-101-03
HP-42	Buford House	1930 Clay Street	2-133-50
HP-43	McClelland Priest House	569 Randolph Street	3-263-04
HP-44	Hanna A. Moore House	411 Randolph Street	5-052-09
HP-45	Andrews/Sanza House	741 Seminary Street	3-252-10
HP-46	Holden Mansion	313 Franklin Street	5-061-12
HP-47	Sawyer House	389-397 Franklin Street	5-061-06
HP-48	Goodman/Corlett House	1225 Division Street	3-265-21
HP-49	Theodore Parker House	1211 Division Street	3-625-05
HP-50	ER Gifford House	608 Randolph Street	3-271-07
HP-51	Edward G. Manasse House	495 Coombs Street	5-053-02
HP-53	Franklin St. Redwood Trees	Franklin Street	NA
HP-54	Capt. George Pinkham House	529/531 Brown Street	3-281-11
HP-55	Capt. N. H. Wulff House	549 Brown Street	3-281-07
HP-56	Williams Smith House	1929 First Street	2-152-11

Note: "HP" numbers represent file number assignments for cataloging purposes. Breaks in consecutive sequence represent properties that were not designated as National Register properties.

nr.lst updated 12/97



National Register Historic Properties in the City of Napa

* State of California Historic Landmark

City of Napa General Plan | Culture.DS4 | 12/98

Figure - HP 2

National Register Historic Properties

North

230' 1/6 Mile 1/2 Mile 1 Mile

0

Source: City of Napa Planning Department

While every effort has been made to insure the accuracy of the information shown on this page, the City of Napa assumes no responsibility for liability from any errors or omissions.

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Table HP-2
CITY OF NAPA LANDMARK DESIGNATIONS
INCLUDING NATIONAL REGISTER STATUS
Listed by Alphabetical Address

File	Name	Address	APN	Zoning	National Register	City Landmark
HP-41	Manassee Mansion	443 Brown Street	5-101-03	RM-12:HP	Yes	4/21/87
HP-04	Churchill Manor	485 Brown Street	5-101-19	RM-12:HP	Yes	4/19/76
HP-54	Captain George Pinkham House	529/531 Brown Street	3-281-11	RM-12:HP:FP	Yes	3/16/93
HP-55	Captain N. H. Wulff House	549 Brown Street	3-281-07	RM-12:HP:FP	Yes	3/16/93
HP-24	Center Building	810-816 Brown Street	3-222-11	CB:PE	No	No
HP-01	County Court House	825 Brown Street	3-215-01	P-Q:FP	Yes	No
HP-27	Plaza Hotel	840-844 Brown Street	3-222-01	CB:PE	Yes	9/12/78
HP-09	Lisbon Winery	1720 Brown Street	3-062-15	CN:HP:FP:PD 83-107	Yes	9/7/76
HP-05	Century Oaks Park	Browns Valley Road	41-382-04	POS	No	6/21/76
HP-29	Buhman Home	1147 Buhman Avenue	50-170-07	AR:HS:CR-1	No	4/3/79
HP-52	Shwarz/Silva House	1386 Calistoga Avenue	3-133-22	RM-12:HP	No	12/1/87
HP-42	Buford House	1930 Clay Street	2-133-50	RH-25:HP	Yes	6/2/87
HP-39	Cedar Gables	486 Coombs Street	5-101-17	RM-12:HP	Yes	No
HP-51	Edward G. Manassee House	495 Coombs Street	5-053-02	RM-12:HP:FP	Yes	12/1/87
HP-21	Tulocay Cemetery	Coombsville Road	45-200-01		No	No
HP-49	Theodore Parker House	1211 Division Street	3-265-05	RP-25:FP	Yes	9/1/87
HP-48	Goodman/Corlett House	1225 Division Street	3-265-21	RP-25:HP:FP	Yes	9/1/87
HP-06	Semorille Building	975 First Street	3-231-02	CB:PE	Yes	7/6/76
HP-20	First National Bank	1026 First Street	3-167-11	CBP:FP	Yes	5/16/78
HP-26	Gordon Building	1130-1146 First Street	3-166-04	CBP:FP	Yes	9/12/78
HP-22	Stage One Building	1202 First Street	3-164-05	CBP:FP	Yes	1/3/78
HP-02	Goodman Library	1219 First Street	3-211-02	CBP:PE:FP	Yes	3/1/76
HP-13	Noyes Mansion	1750 First Street	3-192-05	CB:HP:TI	Yes	3/21/77
HP-56	Williams Smith House	1929 First Street	2-152-11	RM-12:HP	Yes	12/5/95
HP-30	Hackett House	2109 First Street	2-152-06	RM-12:HP	Yes	4/21/87
HP-16	Migliavacca House	1473 Fourth Street	3-261-01	RP-25:HP	Yes	5/16/77
HP-46	Holden Mansion	313 Franklin Street	5-061-12	RL-6	Yes	7/21/87
HP-47	Sawyer House	389-397 Franklin Street	5-061-06	RM-12	Yes	7/21/87

Table HP-2 City of Napa Landmark /National Register Designations, continued

File	Name	Address	APN	Zoning	National Register	City Landmark
HP-53	Franklin Street Redwood Trees	Franklin Street	NA		Yes	1/12/88
HP-38	Noyes (York) House	1005 Jefferson Street	3-153-06	RM-12:HP	No	1/20/87
HP-08	A. Hatt Building	550 Main Street	3-277-01	CV:PD 85-094	Yes	4/3/79
HP-25	Fagiani Building	813 Main Street	3-222-08	CB:PE	No	No
HP-23	Oberon Bar	902 Main Street	3-231-07	CB:PE	No	1/12/88
HP-19	Bank of America Building	903 Main Street	3-221-12	CB	Yes	1/3/78
HP-07	Winship Building	948 Main Street	3-231-01	CB:PE	Yes	7/6/76
HP-18	Napa Opera House	1018 Main Street	3-172-03	CB:PE	Yes	5/16/77
HP-35	Kyser Williams Block	1124-1142 Main Street	3-172-06	CB:PE	No	No
HP-36	Lui Building	1144-1148 Main Street	3-172-06	CB:PE	No	No
HP-10	Sam Kee Laundry	1245 Main Street	3-137-03	CB:PE	Yes	10/26/76
HP-31	Hennessey House	1727 Main Street	3-062-30	RM-12:HP:FP	Yes	6/2/87
HP-40	George E. Goodman Mansion	1120 Oak Street	3-281-16	RM-12:HP	Yes	2/17/87
HP-32	Eliza G. Yount House	1790 Pine St. (423 Seminary St.)	5-021-11	RH-18:HP	Yes	4/15/86
HP-14	Dollarhide Estate	1991 Pine Street	4-261-41	RL-6	No	3/21/77
HP-44	Hanna A. Moore House	411 Randolph Street	5-052-09	RM-12:HP:FP	Yes	4/21/87
HP-33	George E. Goodman, Jr. House (Winchester Arms Apartments)	492 Randolph Street	5-053-01	RM-12:FP	Yes	11/5/86
HP-43	McClelland Priest House	569 Randolph Street	3-263-04	RP-25:FP	Yes	2/2/88
HP-50	E.R. Gifford House	608 Randolph Street	3-271-07	RP-25	Yes	10/6/87
HP-11	First United Methodist Church	625 Randolph Street	3-262-07	RP-25:FP	No	9/7/76
HP-28	James Clyman House	2243 Redwood Road	42-041-64	RL-6	No	2/28/79
HP-15	Franklin Street Post Office	1351 Second Street	3-208-01	CB:PE	Yes	3/21/77
HP-32	Eliza G. Yount House	423 Seminary St. (1790 Pine St.)	5-021-11	RH-18:HP	Yes	4/15/86
HP-45	Andrews/Sanza House	741 Seminary Street	3-252-10	RP-25:HP	Yes	7/21/87
HP-37	Thomas Earl House	1221 Seminary Street	3-152-13	RM-12:HP	Yes	4/21/87
HP-12	Old Adobe	376 Soscol Avenue	46-570-08	CH:TI	No	10/26/76
HP-17	Borreo Building	920-930 Third Street	6-133-02	CV:TI	No	5/16/77
HP-34	Noyes Lumber Company	929 Third Street	6-191-08	M:TI	Destroyed 4/20/96	1/6/87
HP-03	First Presbyterian Church	1333 Third Street	3-209-04	CB:HP	Yes	3/1/76

administrative forms - lndmrk2.lst rev. 12/14/95

End of List

Fuller Park

The Fuller Park Historic Resources Inventory was undertaken in June 1994, in order to document all contributing, historic resources in the Fuller Park neighborhood. The ultimate goal was establishment of a local historic district. This intensive-level survey established the survey area's characteristics, delineated its boundaries and listed its contributing and non-contributing resources (Figure HP-3). Another goal was to protect the affordable housing now existing in the neighborhood. Data from the survey would assist in complying with the historic resources evaluation requirements of the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act. Properties would be identified as potentially eligible for nomination to the National Register of Historic Places.

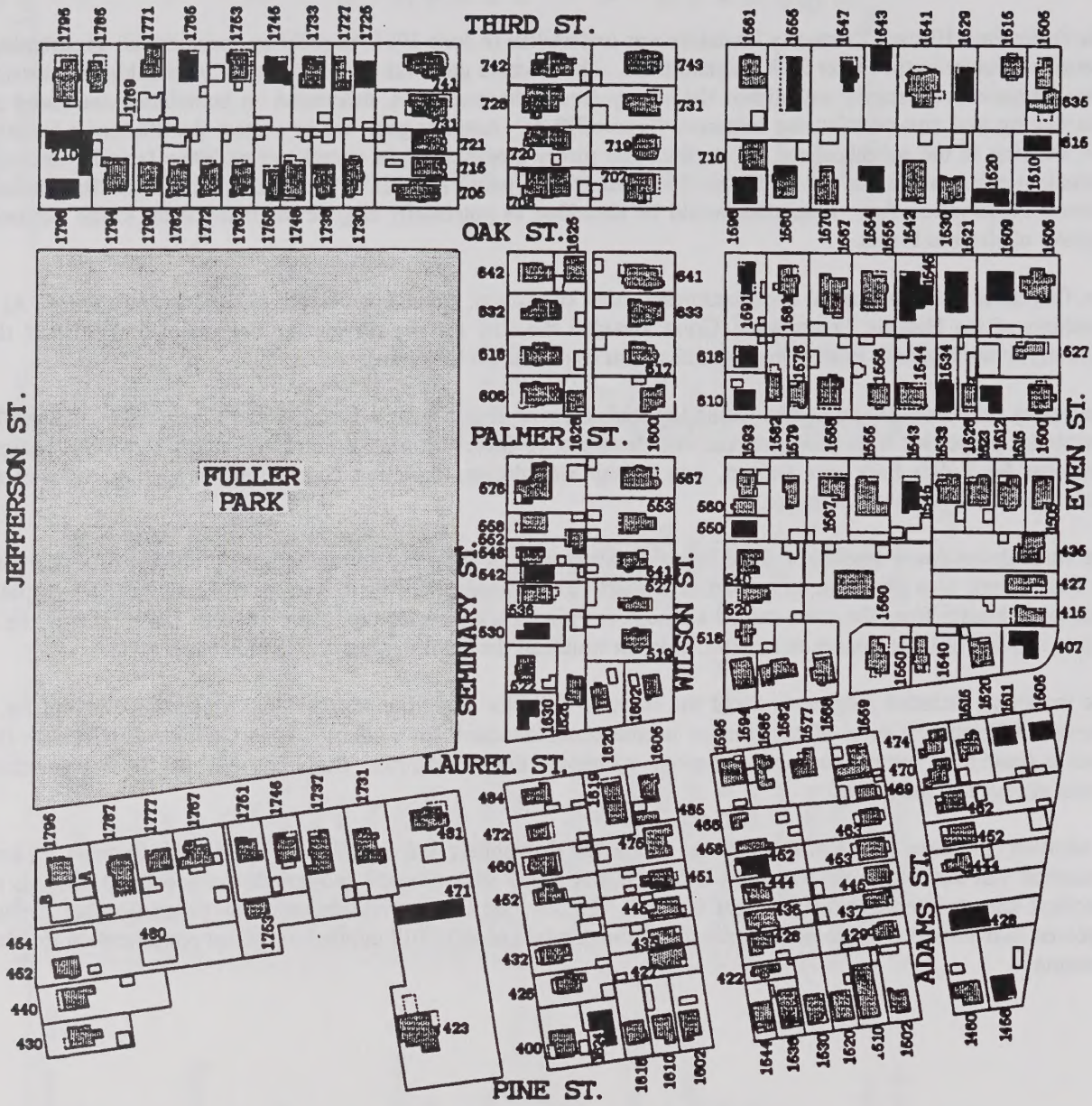
The City hired an architectural historian/preservation consultant, Donald S. Napoli, to conduct the survey. As a condition of the Historic Preservation Grant awarded the City for the survey, the consultant had to meet the Secretary of the Interior's professional qualifications standards for historians.

The survey evaluated 220 properties within the boundaries of Third, Jefferson, Laurel and Even Streets. Some 170 contributor properties were photographed and described on State Historic Resources Inventory forms. A context statement for Fuller Park was written, and a map was drawn, depicting contributing properties, as well as candidates for the National Register.

The study documented a potential local historic district with over 80 percent contributor properties. In addition, the Fuller Park area appeared to be part of a much larger residential district that is National Register eligible, containing houses from the same period as those in Fuller Park, development from 1890 to 1949. It includes a greater number of large houses and a few blocks on which all the buildings share an architectural style.

The inventory included judgments about the National Register eligibility of individual properties. Except for a five-year difference in dates of construction or alteration, standards for a contributor to the local district were the same as those for a contributor to the prospective National Register district. Buildings that met the first standard almost always met the second.

In addition, the inventory also documented properties that appear individually eligible for the Register. Their evaluation was not within the Fuller Park context, but rather within larger and less formally defined contexts of historical and architectural development in Napa. Finally, the inventory included a few properties that neither appeared individually eligible nor contributed to the district but were still entitled to special consideration in local planning.



City of Napa General Plan | Fuller.DS4 | 12/98

Figure - HP 3a

Fuller Park Historic Survey

North

Contributor

Non-contributor

Not to Scale

Source: City of Napa Planning Department

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Figure - HP 3b

Napa Abajo/Fuller Park National Register District

North

Boundary

Not to Scale

Source: City of Napa Planning Department

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Napa Abajo / Fuller Park National Register District

Designation

In 1996, the City of Napa used an historic preservation grant to produce a National Register nomination for its oldest residential neighborhood. Donald S. Napoli, the City's consultant, wrote the nomination and worked with the State Office of Historic Preservation on which properties were to be included. On November 8, 1996, the nomination was accepted by the State Historic Resources Commission and forwarded to the Keeper of the Register. The District was officially listed on February 19, 1997.

The District includes some or all of thirty adjacent blocks south of downtown Napa located between Fuller Park and the Napa River. It is a residential district with 297 contributing resources reflecting the evolution of architectural style in Napa between 1968 to 1918, its "period of significance." Another 308 resources are non-contributors, either built after 1918 or so physically altered as to lose historic integrity. (a detailed description of the National Register District along with photos and maps are contained in the National Register District nomination document; NPS Form 10-900 dated September 30, 1996, on file at the City of Napa Planning Department.)

The Cultural Heritage Commission and representatives of the State Office of Historic Preservation met with District property owners to explain National Register status. Owner consent was achieved, with only 3 property owners objecting to the nomination.

A list of contributor and non-contributor properties is available at the City of Napa Planning Department.

Description and Historic Significance

The Napa Abajo/Fuller Park Historic District reflects the state of architectural development in Napa at the end of the First World War. In particular, it depicts changes and continuities in residential architecture and development from 1868, twenty years after the founding of the town, to 1918, the beginning of Napa's post-World War I residential construction boom. The district illustrates architectural styles and building types that were typical in Napa during the period. The district also symbolizes two aspects of social life in Napa -- the reliance on single-family residences to fulfill housing needs and the usage of houses to illustrate distinctions in wealth and status.

Residential construction in the district began soon after the area was added to the town in the mid-1850s. The eastern half of the district contains much of Napa Abajo, the first addition to the city. Lots were laid out there in 1853. The western half includes parts of three additions made a few years later. The physical expansion of Napa during the decade mirrored its population growth from around 50 in 1850 to about 1,000 ten years later. The new areas gave the city a means of creating residential neighborhoods beyond the original town plat, which took on a more commercial and industrial character as business activity in the town grew. Most of Napa's first houses were flimsily constructed and designed to be replaced. Only a handful remain today. Starting in the late 1860's residences became more substantial and more permanent. They are the district's earliest houses.

Residential construction followed a typical Napa pattern based on parcel-splitting and reflected local population growth during the period of significance. Generally, the blocks were first divided into large lots and allowed small-scale agricultural use. Later these parcels were split as the need for residential sites grew. A house from the 1870s or 1880s probably represented the first division of a block into large lots. An adjacent residence from later decades usually indicated not a replacement on an original parcel but the first building on the previously unused half of an original lot. Construction was vigorous through 1890, dropped off considerably during the depression of the mid- and late-1890s (when Napa's population actually decreased), picked up again as prosperity

returned after the turn of the century, and then slowed during World War I. So dates of construction reflected residential needs to some extent. By 1918, when the district had only a handful of empty lots, each block contained buildings from several decades.

Early houses in the district had functional designs. Examples of architectural styles did not appear until after 1868. By the 1870s, when widespread construction began in the neighborhood, builders in Napa had the skill and materials to put up fashionable houses. Some property owners, meanwhile, continued to have purely functional dwellings erected for them. As a result, differences in residential building in the district between 1868 and 1918 did not represent an evolution from simple, functional structures to complex, stylish ones. Instead, construction of both sorts of houses occurred at the same time.

Houses expressed architectural style in two ways. Some followed popular styles in both form and detail. Others used standard vernacular models and added fashionable ornamentation. This included porch posts and balustrades, decorative door and window moldings, and (with the coming of Eastlake ornament) completely non-functional embellishment like finials and sunbursts. Meanwhile, construction continued of functional houses without stylistic pretension. These followed standard vernacular building types in the nineteenth century but tended to drift away from "folk house" patterns after the turn of the century.

About sixty percent of the houses were not designed to represent an architectural style. Some were purely functional and had no ornament or stylistic pretension. Others had a simple form embellished with decorative elements from popular styles -- for instance, turned porch posts or classical window hoods. The district's first houses (and the oldest remaining examples) exemplified vernacular building types constructed across the country in the mid-nineteenth century. The single-story "gable front" was constructed most often, sometimes elaborated with a second story or a side-facing gabled wing. Starting about 1870, simple designs were reserved for smaller dwellings. After 1890, only a small number of houses without a clear style were constructed in the district.

The remaining buildings reflected styles popular in Napa at different times during the period of significance. Many displayed sophisticated designs rendered with obvious care and craftsmanship. Most probably represented renditions of pattern-book designs that local builders used to meet the needs of the original owners. Architects did design one-of-a-kind houses in the district, however. Most were large and richly ornamented residences. Napa's most successful designers, Luther Turton and William Corlett, put up major buildings in the district beginning in the 1880s. San Francisco architects also obtained commissions for residences in the district. The most notable of them was Ernest Coxhead, whose Churchill House (1892, later altered) was among the earliest examples of the First Bay Tradition.

The district illustrated the evolution of architectural style in Napa between 1868 and 1918. Among the styles of the Victorian era, the Italianate appeared the earliest. In the 1880s the Stick/Eastlake houses came into vogue. They also had hipped roofs and prominent cornices, but their ornament -- slender turned posts and balusters on the porch, narrow diagonal boards in the frieze and window panels -- was less formal than that of the Italianate. An even more important difference was the variation in surface-depth on the front facade. The typical Stick/Eastlake house in the district had a gabled box window on one half of the front elevation and a recessed porch on the other. The last, most lavish, and least frequently built of the district's Victorian styles was the Queen Anne, which arrived in Napa just before the hard times of the 1890s. These houses extended the informality of the Stick/Eastlake with multiple auxiliary gables, shingled second-story walls, and wrap-around porches. A few examples in the district sported the style's signature feature, a prominently capped corner tower.

The new century brought a reaction to the flamboyance of the Victorian era. In Napa, as elsewhere in California, local builders turned to two newer, simpler styles. The first, the Colonial Revival, appeared more often in the district than any other style. It featured shallow hipped roofs, simple shelf molding atop doors and windows, and front porches with Tuscan columns. The second new style, the Craftsman, was nearly as popular. It used gable roofs with overhanging eaves and added rustic details designed to give a hand-made appearance. Often a Craftsman house had shingle siding, clinker brick porches and chimneys, and a front porch that emphasized the building's horizontality by stretching across the entire elevation. The district's most prominent examples had one-and-a-half-stories and a wealth of intricate detailing.

The district also reflected aspects of social history in Napa. One was the growth of single-family residences, Napa's standard response to the need for additional housing during the period of significance. Construction costs remained comparatively low, while Napa maintained a fairly high level of general prosperity. Most full-time workers could thus afford detached houses. Family life, meanwhile, was highly valued, especially in its urban middle-class form with the husband employed outside the home and the wife taking care of domestic matters. As a result, most of Napa's permanent residents lived in single-family houses, and most of the houses were occupied by their owners. Nevertheless, because the residents varied widely from one another in their incomes and occupations (not to mention family size and aesthetic preference), their dwellings differed in spaciousness and architectural sophistication. The district also reveals these differences.

The district reflected not only class differences but also an attitude toward those differences. The rich, even when they lived close to one another, did not live far from shopkeepers, skilled tradesmen, and common laborers. The mixture of houses reflected an economically integrated society in which rich and poor routinely interacted. People who had the means to build large houses showed no apprehension about putting them up next to those whom could afford only small residences. Class consciousness was strong between 1868 and 1918, however, For some Napa's the presence of grand houses may have signaled the town's progress and prosperity, while for others it reflected an unfair distribution of wealth. In any case, neighborhoods developed in Napa after 1918 appealed to narrower bands of the economic spectrum.

The Napa Abajo/Fuller Park Historic District reflects residential architecture of Napa more clearly than any other group of buildings. The integrity of the district remains high. Roughly 70 percent of the major buildings contribute to the district's significance. The city has other neighborhoods containing old buildings and many housing tracts in outlying areas. No neighborhood displays so many well executed examples of architectural styles from the period of significance, however, and none exhibits such a large collection of vernacular buildings. By its size and age, the district reflects the growth of single-family housing more clearly than other neighborhoods. While the mixing of large and small houses typified residential construction throughout Napa before World War II, no other neighborhood provides such dramatic contrasts. Nor does any have so many contributing buildings.

City-Wide Historical Resources Survey

In January 1994, the Cultural Heritage Commission initiated action toward conducting and financing an updated inventory of citywide historic resources. The City Council approved survey funding, and by June, San Buenaventura Research Associates were selected and under contract to perform the task.

By January 1995, the completed windshield survey report was presented to the Commission. The survey examined over 6,000 parcels in central Napa, including the 1978 survey areas: Downtown, Napa Abajo, Fuller (minus the 1994 Fuller Park survey area), West Napa, Spencer, Calistoga, St. Johns, East Napa and Alta Heights, as well as the Pueblo planning area west of Highway #29.

Within this area, the consultants outlined 21 distinct (different "age") groups of contributor buildings, called "Historic Resources Planning Areas" or HRPAs (Figure HP-4 : *Historic Resources Planning Areas.*) Every property surveyed was assigned a date of construction, a visual score (Visual Evidence of Significance or VES), an integrity evaluation, and a "Map Score," combining the values of age (date of construction) and VES.

The Citywide Survey Methodology and Results Report is available at the City of Napa Planning Department.

Survey Results

The data collected by the survey was extensive, but preliminary. The inventory will be used to update the 1978 Master List of historic resources. In addition, the potential districts represented by the HRPAs, highlight neighborhoods warranting special consideration in the city's comprehensive land use planning process. The policies contained in this Element recognize the HRPAs and recommend conservation overlay designations, as well as target areas for stabilization efforts.

On July 10, 1995, the Cultural Heritage Commission recommended adoption of the citywide survey by the City Council as the City's updated Master List. The Commission and its staff initiated property owner notice, and prepared the list for the City Council's review in Spring 1996.

Inventory Adopted

Following Council goals-setting, emphasizing maintaining neighborhood character, the City Council adopted the new Historical Resources Inventory (HRI) that included over 2, 800 buildings. The Inventory replaces the city's 1978 "Master List". Prior to Council action, the cultural Heritage Commission conducted three informational meetings for property owners to explain the listing. Primary reason for the list: enabling owners to use the State Historical Building Code when repairing or rehabilitating their property. Demolitions would be reviewed by the Cultural Heritage Commission or planning staff, but property alterations would not.

The Historical Resources Inventory list of properties is available in the City of Napa Planning Department.

Railroad ------

City of Napa General Plan

Histres.DS4

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Figure - HP 4

Citywide Survey: Historic Resources

North

Citywide Survey Area

725' 1/2 Mile 1 Mile 3 Miles

0

Source: City of Napa Planning Department

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St. John's Historic Resources Inventory

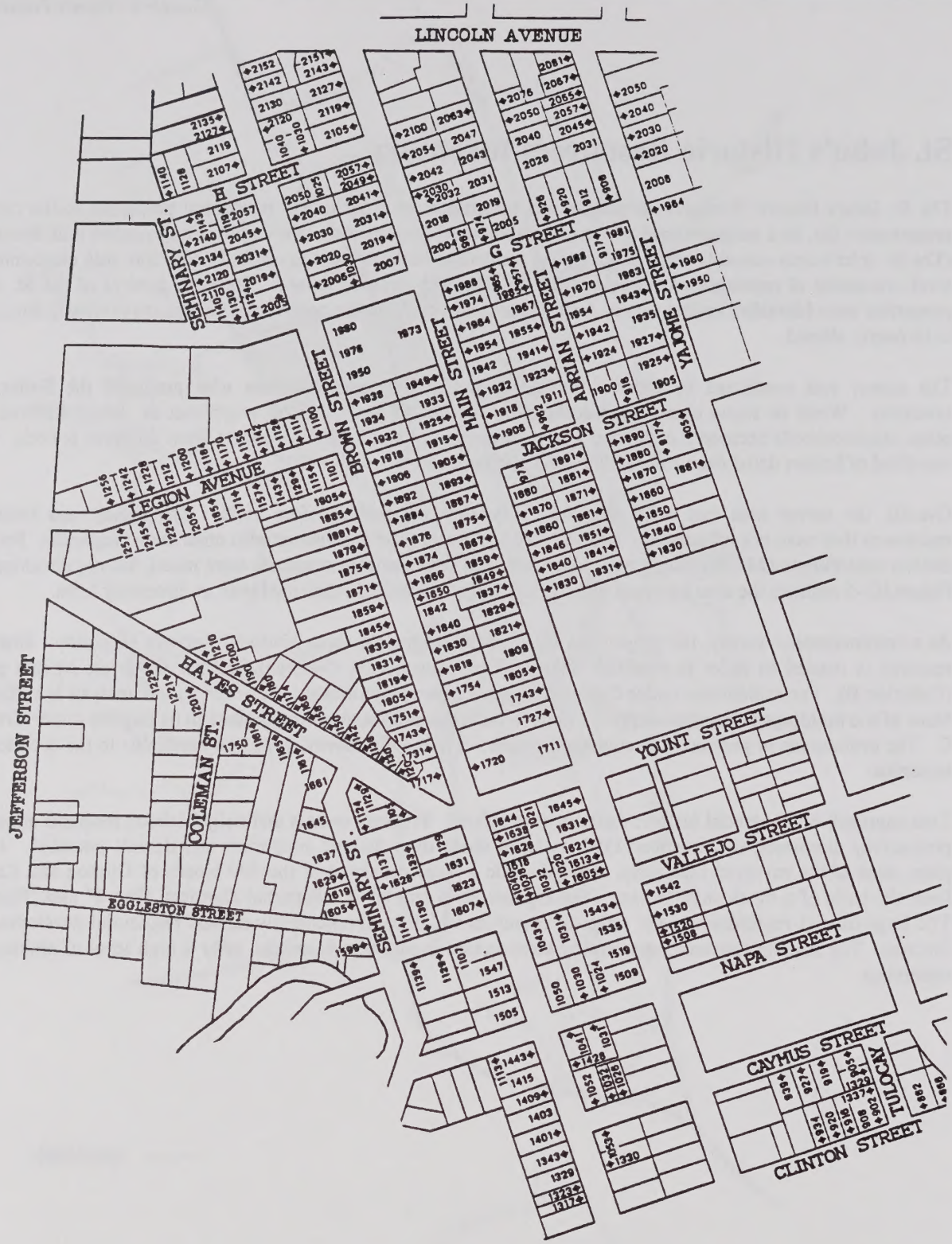
The St. John's Historic Resources Inventory was undertaken in order to add residential properties to the citywide preservation list, in a neighborhood where affordable housing units were at possible risk of neglect and alteration. (The St. John's area contains some of the oldest residential buildings in the city.) In addition, this more-intensive level evaluation of resources served as a check on the 1995 citywide survey. Some 85 percent of the St. John's properties were identified in that survey, with the addition of about ten contributor buildings previously considered to be overly altered.

The survey was conducted by Donald S. Napoli, the architectural historian who produced the Fuller Park inventory. While he found change had occurred in the last 45 years, Napoli noted that St. John's differed from other neighborhoods because it contained a large collection of small-scale dwellings from different periods: about one-third of houses dated from before 1900, and another third from after 1938.

Overall, the survey area had more than 400 buildings constructed before 1950. The survey was limited to residences that were not substantially altered since 1950, and were contiguous with other such properties. Potential district contributors (246 buildings) were identified, and some isolated resources were noted, but not documented. Figure HP-5 outlines the area surveyed and the buildings that were documented with an inventory form.

As a reconnaissance survey, the project did not produce judgments about National Register eligibility. Historical research is needed in order to establish links to significant events (National Register Criterion A) and people (Criterion B). For evaluations under Criterion C, architectural significance, however, visual analysis is sufficient. None of the buildings documented appears to have sufficient architectural importance to be eligible under Criterion C. The evaluations of previously documented properties (the 1978 survey) appeared unreliable to the architectural historian.

Two approaches to potential historic districts were offered. Property owners and neighborhood residents attended a post-survey discussion in December 1995, to learn about their historic properties and district potential. In one plan, most of the surveyed residential area falls into a large district, and the 900 blocks of Clinton and Caymus form the basis of a much smaller one. (See Figures HP-6 and HP-7 :"Potential Districts, Plan 1" and "Plan 2") The large district represents a wide range of resources which comprehensively depicts residential development in the area. The smaller districts, representing construction in one decade or less, offer a high level of architectural coherence.



City of Napa General Plan | StJohns.DS4 | 12/98

Figure - HP 5

St. Johns Historic Survey

North

Building Documented on Inventory Form ✦

Street Address or Symbol means inclusion within Potential District

Not to Scale

Source: City of Napa Planning Department

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Figure - HP 6

North

Potential Districts
Plan 1

District Boundary

Source: City of Napa Planning Department

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Figure - HP 7

North

Potential Districts Plan 2

District Boundary

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Source: City of Napa Planning Department

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ARCHAEOLOGICAL RESOURCES

Cultural resources are prehistoric and historic elements or features of the environment that have been manufactured, affected, or altered by human forces. These resources vary from large, historic, industrial complexes to turn-of-the-century farmhouses, to small scatters of stone flakes that are residue from prehistoric tool manufacturing. Cultural resources investigations attempt not only to analyze the materials left by past cultures, but also to study the previous inhabitants' identities and activities. A number of cultural overviews for the Napa region have been prepared including the following:

- Barrett, S. 1908. The Ethnography of the Pomo and Neighboring Indians. University of California Publications in American Archaeology and Ethnography, Vol. 6, Berkeley.

- Kroeber, A. 1925. Handbook of the Indians of California. Bureau of American Ethnology, Bulletin 78. Washington, D.C.

- Moratto, M. 1984. California Archaeology. Academic Press, Orlando.

- Powers, S. 1877. Tribes of California. Contributions to North American Ethnology, Vol. 3, Washington D.C.

Information for this section of the General Plan was gathered from reports provided by City staff and from the California Archaeological Inventory, Northwestern Information Center at Sonoma State University (CAI). The Information Center is a repository of cultural resources studies that contain information on both prehistoric and historic sites.

The CAI's data base for Napa County lists a number of overviews, regional inventories, and intensive cultural resources studies. Many of the resources on private lands were recorded as a direct result of development, and as such, many of these resources may no longer exist, other than as a site record form or technical report. Nearly 100 studies performed in Napa County are on file at the CAI and describe almost 400 sites that have been located and recorded as a result of these studies. There are only a few areas in the City that have been surveyed intensively by archaeologists. The lack of recorded archaeological resources, however, is not conclusive evidence that such resources do not exist; the absence of information more accurately means that the records are incomplete.

The presence of prehistoric artifacts, such as obsidian and other stone flakes, and historic resources, such as structures and orchards, provides evidence that certain portions of the City are archaeologically sensitive. These sensitive areas include villages, special use sites, religious and/or sacred areas, and historic structures/localities.

Based on the information available, it is likely that there are additional archaeological resources within the RUL that are not documented. Pre-historic resources are more likely to occur along the Napa River and its tributaries. Sensitive information regarding the presence of archaeological sites is made available to qualified professional researchers when necessary to determine any impact to resources related to development.

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End of Chapter 6

CHAPTER 7
NATURAL RESOURCES AND OPEN SPACE

INTRODUCTION

This chapter describes the woodland/grassland/chaparral, riparian, wetland and fish habitats that are typical of the Napa area. Rare, endangered and threatened species and ecological/natural study areas are also considered.

Over time, increasing urbanization leads to a decrease in the number and diversity of natural plant and animal species. In the Napa Valley, maintaining a natural biological diversity is particularly important for the Napa River's watershed which is sensitive because it is uniquely centered at the transition crossroads of major north-south and east-west biological regions. For example, the Napa Valley represents the eastern-most habitat for Coast Redwood, the intermixing zone for Coast and Interior Live Oak, and the most northern extension of San Francisco Bay wetland habitats.

Because natural plant and wildlife habitats are essentially nonrenewable and irreplaceable resources, their loss to development should be carefully considered. Once urbanized, it is uncommon to find natural habitats rehabilitated to their former status.

VEGETATION COMMUNITIES / HABITAT TYPES

Wildlife habitats are environments that typically support a given diversity of wildlife species based on plant associations and recognizable floristic groupings (referred to as "plant communities"). Biological resources include all plant and animal species that occur in the greater Napa region.

The California Interagency Wildlife Task Group (consisting of representatives from the California Department of Fish and Game [CDFG], California Department of Forestry [CDF] and Fire Protection, Pacific Gas & Electric [PG&E], and the U.S. Forest Service [USFS]) developed and published *A Guide to Wildlife Habitats of California* (1988). The goal of this Guide was to identify and classify existing vegetation types important to wildlife based upon the dominant plant species and other unique physical characteristics which are important to the life requirements (breeding, feeding, and protective cover) of the resident wildlife.

According to the Guide, there are 17 major vegetation communities and associated wildlife habitat types in the Napa area. The following is a brief description of these vegetation communities and wildlife habitat types.

Tree-Dominated Habitats

There are four habitat types dominated by trees in the Napa region; 1) Montane Hardwood or Mixed Evergreen Forest; 2) Valley Foothill Hardwoods or Oak Woodlands; 3) Valley Foothill Riparian Woodlands; and 4) Eucalyptus Forests.

1. Montane Hardwood

Montane hardwood (or Mixed Evergreen) forests occur north and east of the City of Napa on the east-facing western slopes of the Napa Valley. Montane Hardwood forests are composed of trees 50 to 100 feet tall, with an infrequent and poorly developed shrub layer and a sparse herbaceous layer. At lower elevation sites, the shrub layer may be more prevalent as the mixed chaparral community intergrades with the Montane Hardwood forest. Dominant trees include California Bay, Madrone, California Buckeye, and several varieties of Oak.

2. Valley Foothill Hardwoods (Oak Woodlands)

There are three types of oak woodland plant communities in the Napa region: Blue Oak Woodlands, Valley Oak Woodlands, and Coastal Oak Woodlands. These oak woodlands are most common on the west-facing eastern foothills of the Napa Valley. Valley Oak Woodlands are best developed in the bottom of the Napa Valley. Oak woodlands typically range from 25 to 75 feet in height.

Blue and Valley Oak woodlands are typically open with a park-like or savannah appearance. The shrub undergrowth of Blue and Valley Oak Woodlands is relatively sparse with the annual grassland habitat type typically the dominant understory. The physical structure of Coastal Oak Woodlands is variable ranging from closed canopies on wetter sites to open savannah on drier sites. The extent of understory of Coastal Oak Woodlands is as variable as the tree overstory, ranging from dense almost impenetrable stands to openings of scattered bushes (Shields and Duncan 1966, Graves 1977, Schitoskey and Woodmansee 1978).

3. Valley Foothill Riparian

Valley Foothill Riparian habitats are generally associated with the edges or flood plains of rivers, creeks and streams (both perennial or seasonal watercourses) where the soils are deep and the groundwater table is near the surface. The best examples of this habitat type in the Napa region occur along the Napa River and its primary, secondary, and tertiary tributaries or streams. The vegetation cover varies from dense trees and underbrush to scattered or no trees with grass-covered banks, depending upon the types of land uses and size of the waterway.

The riparian vegetation along the Napa River and its tributaries provides very important wildlife habitat. Many wildlife species depend upon the habitat for water, food, cover and nesting sites. The vegetation cover shades the waterways which keeps the water temperature within the range necessary for fish breeding and feeding patterns. Riparian vegetation also buffers the waterway environment from urban activities by allowing runoff from streets and hillsides to percolate more slowly into the stream banks which helps filter pollutants and sediments from the surface water. Studies on riparian habitats elsewhere in the state reported at least 50 species of amphibians and reptiles, 147 bird species, and 55 mammal species that utilize this habitat type (Brode and Bury 1985, Laymon 1985, and Trapp et al. 1985). The California Department of Fish and Game (CDFG) has identified the Napa River and six of its tributaries as migration routes, nursery habitat and spawning grounds for steelhead trout, including Napa, Redwood, Milliken, Tulocay, Browns Valley, and Sarco Creeks. Striped bass and other anadromous fish use the lower portions of the Napa River downstream of the City as nursery habitats for their young.

Significant native flora and fauna of the Napa River system riparian habitat:

- Trees such as black walnut, cottonwoods willows alders, valley and coast live oak, and bay.
- Shrubs such as elderberry, box elder, red flowering current, and toyon.
- Grasses and herbaceous plants such as blackberry, Mason's Lileopsis (a rare and endangered plant), bunchgrass, beardless wildrye, tule, alkalai bulrush, and cat-tail.

- Birds such as redwing blackbird, mallard, morning dove, song sparrow, heron, wood duck, kingfisher, rail and grebe.
- Animals such as mink, muskrat, deer mice, raccoon, deer, gray fox and bobcat.
- Fish such as striped bass, chinook salmon, sturgeon, yellowfin goby, splittail and inland silversides.

At one time, a dense canopy of riparian habitat dominated by cottonwoods and willows lined the banks of the Napa River, but today most of the remaining vegetation exists only within the river channel (i.e., below the tops of the banks). Within the City and environs, tributaries of the Napa River have also experienced destruction of native riparian habitat. A 1985 inventory of streambank erosion showed several areas of eroded streambanks ranging from moderate to severe.

Within the City, channelization and urban development have significantly modified the Napa River's original dense riparian forest so that only remnant patches remain. Large amounts of rip-rap protect the bank slopes in the lower third of the river within the City and support only a sparse cover of grasses and weeds. In other areas, exotic trees (acacia, eucalyptus, etc.) have replaced the native species.

The riparian habitat that remains within the City consists mostly of scrub/shrub and herbaceous vegetation with small patches of brackish marsh. Throughout downtown Napa, riprap or concrete rubble covers much of the river bank and is vegetated with herbs and shrubs. Further downstream, oak and mixed woodlands line the banks. Finally, as the river nears its mouth at San Pablo Bay, it is flanked by diked pasturelands (historical wetlands) and tidal marsh.

4. Eucalyptus

Another tree dominated habitat found in the City and environs is the Eucalyptus forest. Eucalyptus trees are not native to California and have been extensively planted throughout the state since 1856 for windbreaks and lumber. These artificially created habitats occur in a wide variety of site conditions but are generally found on relatively flat and gently rolling terrain. The most common species is the blue gum which when mature can reach heights of over 130 feet at maturity.

In dense plantings, eucalyptus trees have minimal understory due to the extent of canopy and the chemical growth inhibitor that the species introduces to the soil. While offering limited habitat and in some cases, scenic backdrop, eucalyptus trees are often considered a hazard to development that occurs in close proximity due to the limb fall and blow-over potential of older trees. Although non-native, these trees are seen by many as a symbolic and historic contributor to the California landscape.

Brush-Dominated Habitats (Chapparal)

Another major vegetation and wildlife habitat found within the City's planning area is the Chapparal community. Chaparral is the term used to refer to dense, evergreen, leathery-leaved drought tolerant shrubs that are active in winter, dormant in summer, and adapted to (in some cases, dependent upon) frequent fires. There are two chaparral plant communities in the Napa region, Mixed Chaparral and Chemise-Redshank Chaparral. Both of these habitat types are most prevalent in the eastern foothills and mountains of Napa where the soils are the thinnest. The predominant plants grow three to ten feet tall, usually quite densely and are typically comprised of manzanita, Toyon, poison oak, and scrub oak.

Many animals depend on the chapparal brush and understory shrubs for food and shelter from predators. Chaparral is also vital for preserving soil structure, retaining water and controlling erosion.

Herbaceous-Dominated Habitats

Herbacceous dominated habitats that occur in the City planning area are grouped into two major types, Grassland and Wetland. The grassland areas generally occur in locations where there remains development potential within the City; however, Wetland habitats general occur along the margins of the river and its tributaries or in areas where drainage is confined. These areas generally have limited development potential due to Federal, State and local habitat protection regulations and/or due to flood hazard within a floodplain.

Grasslands

The grassland vegetation community and habitat is composed of various annual grasses and herbs, and covers much of Napa's undeveloped, treeless valley bottomlands, foothills and south-facing slopes. There are two types of grassland habitat types in the Napa region; Annual Valley or Non-native Grasslands and Perennial Valley or Native Grasslands. The Annual Valley Grassland is by far the most common of the grassland types in the Napa region and throughout the state and is now considered a naturalized plant community. The Perennial Valley Grasslands are limited to relic stands of limited size.

The Annual Grasslands in the Napa Valley consist of expanses of predominantly non-native annual grasses and forbs. The Perennial Valley Grassland type is dominated by native perennial grasses which remain green throughout the year, but typically contain a large component of annual grasses and forbs.
Grasslands serve as recharge areas to streams and marshes and provide habitat for a variety of wildlife.

Although lands within the City's RUL are intended primarily for urban development, the retention of some grassland, as well as chaparral and woodland is a factor in preventing erosion and land instability and preserving the City's scenic qualities.

Wetlands

In general, a wetland is land that is periodically flooded by tidal action, a rise in river flow, rain, or human action. Marshes, bogs, vernal pools, swamps, baylands and riparian areas are examples of wetland habitat. Wetlands are a dynamic habitat that change with the season and the hydrological forces that contribute to their existence. For example, the mudflats of low tide may be open water at high tide. Or, in a seasonal wetland a shallow lake may appear in winter only to become a dry meadow in summer. Such seasonal wetlands may occur in a low-lying area or depression underlain by hard-packed soil that is slow to drain after winter rains; a vernal pool is a typical example of such seasonality. Whatever form a wetland does take, its existence is determined by the movement of water in and out of the area. With just the two essential elements of a wetland - land and water - the result can be a wetland that ranks among the most complex and diverse ecosystems known.

Some of the most important functions of wetlands are:

- Water quality protection and improvement - water passing through a wetland carries organisms, sediments, nutrients an pollutants. the vegetation and soil in the wetland act as a sieve, trapping those materials and filtering the water.

- Flood control and groundwater recharge - the retention and slow release of flows in freshwater wetlands can lessen the effects of flood peaks and provide groundwater recharge.

- Erosion control - wetlands bordering large or deep water bodies provide vegetation to protect against erosion by stabilizing banks and damping the wave energy of the water body.

- Fish and wildlife - the combination of vegetation and open water in wetlands provides food, rearing areas, and cover for waterfowl and shorebirds and also spawning habitat and food for freshwater and marine fishes. Many species of birds and fish are absolutely dependent on wetlands.
- Biological diversity - aquatic and terrestrial habitats overlap in wetlands, so they serve wildlife from both habitats as well as the plants and animals that have adapted specifically to life within the wetland.
- Recreation - The diversity of wildlife and aesthetic qualities found in many wetlands at tract large numbers of outdoor enthusiasts, including anglers, boaters, birdwatchers, and photographers.

Governmental agencies that regulate wetlands (see The Regulatory Setting) use the following characteristics to define wetlands:

1. Predominantly undrained hydric soils (soils with low concentrations of oxygen in the upper layers during the growing season).
2. A Predominance, at least periodically, of hydrophytic plants (plants that have adapted to the low availability of oxygen and other stresses in saturated soils).
3. A non-soil substrate (such as rock) that is saturated with water or covered by shallow water each year at some point during the growing season).

There are three types of wetland habitats in the Napa Valley, including Freshwater Emergent Wetlands, Saline (or Saltwater) Emergent Wetlands, and Seasonal Wetlands. These types of wetlands occur throughout the Napa region primarily along native creeks and in the bottom lands of the Napa Valley.

Freshwater Emergent Wetland:

Freshwater Emergent Wetlands are associated with water bodies not influenced by ocean tides such as ponds, lakes, creeks and rivers. These wetlands are among the most productive wildlife habitats in California, providing food, cover, nesting sites, and water for more than 160 bird species, numerous mammal, reptile, amphibian, and fish species (U.S. Comptroller General 1979). Freshwater marshes support major waterfowl and shorebird nesting and wintering areas, and are the primary habitat for several non-game animals. Because of their ability to provide a varied habitat for both resident and non-resident wildlife, and because of their relative scarcity throughout the Bay Area, these marshlands are considered a significant habitat area. Napa's freshwater marsh areas are also important as natural flood control areas, holding excessive flood waters during high water flow periods. They help moderate the Valley's temperature and improve air quality by, extracting suspended dust from the air passing over them.

Freshwater emergent wetlands occur in the City and environs in proximity to fresh water bodies, creeks and in the upper portions of the Napa River above Lincoln Avenue.

Saltwater Emergent Wetlands:

Saline or Saltwater Emergent Wetlands occur along the margins of bays, lagoons, estuaries, and those portions of rivers that are under ocean tidal influence. This habitat type may be further divided into true saltmarsh with soils of a salt content (salinity) near or greater than ocean waters (35 parts per thousand) and brackish marshes with salinities of less than 5 parts per thousand. Brackish marshes occur along the margins of those portions of the Napa River under tidal influence for portions of the year (predominantly north of Horseshoe Bend and south of Lincoln

Avenue). The saltwater marshes that are influenced by tidal fluctuations throughout the year on the Napa River occur south of Horseshoe Bend at the mouth of Soscol Creek to the San Pablo Bay

The saltmarsh areas/slough systems of the Napa River provide valuable wildlife habitat such as nursery and feeding areas for the river's fish populations. In fact, the marshlands support over twenty fish species, many of which find habitat in the lower Napa River. The striped bass nursery grounds is one of the major such habitats in the Sacramento-San Joaquin River system. The saltmarshes also are a major wintering ground along the Pacific Flyway for water fowl and support numerous shorebirds. Large numbers of invertebrate species, which play a large role in the productivity of adjacent marine areas, are dependent on the saltmarsh habitat. The weasel and salt marsh harvest mouse (which is a rare and endangered species) also depend upon these marshes.

Just downstream of the City, the Napa River broadens and meets the meandering sloughs of the Napa Marsh. This vast (almost 47,000 acres) complex of existing and historic tidal saltmarshes includes the marshlands along the drainages of the Napa River and other tributaries. Overall, it extends from the San Pablo Bay mudflats northward to the cities of Napa and Sonoma. Compared to the saltier Petaluma Marsh to the west and the fresher Suisun Marsh to the east, the Napa Marsh has an intermediate salinity resulting from freshwater flows from the Sacramento Delta during normal water years. Wet season fresh water discharges to the Napa River also influences salinity. The Napa River and Napa Marsh are ecologically interdependent in other ways. For example, the river carries dissolved minerals, organic detritus and sediment that is trapped and utilized by marsh vegetation.

Portions of the Stanly Ranch, the Airport North Industrial Area and other lands south of the City (generally within the 100-year flood plain) historically were marshlands subject to the Napa River's natural tidal action. Filling and flood control projects have greatly reduced the amount of original saltwater marshland.

Development or disturbance of marshlands destroys the delicate ecological balance that is necessary for the marsh system to survive. Filling of marshes for development eliminates critical marsh vegetation that provides fishery and wildlife habitat needs, and helps regulate tidal and flood waters. Diking or dredging of marshes also destroys vegetation, disrupts the natural tidal flow and imbalances the fresh, salt or brackish water elements.

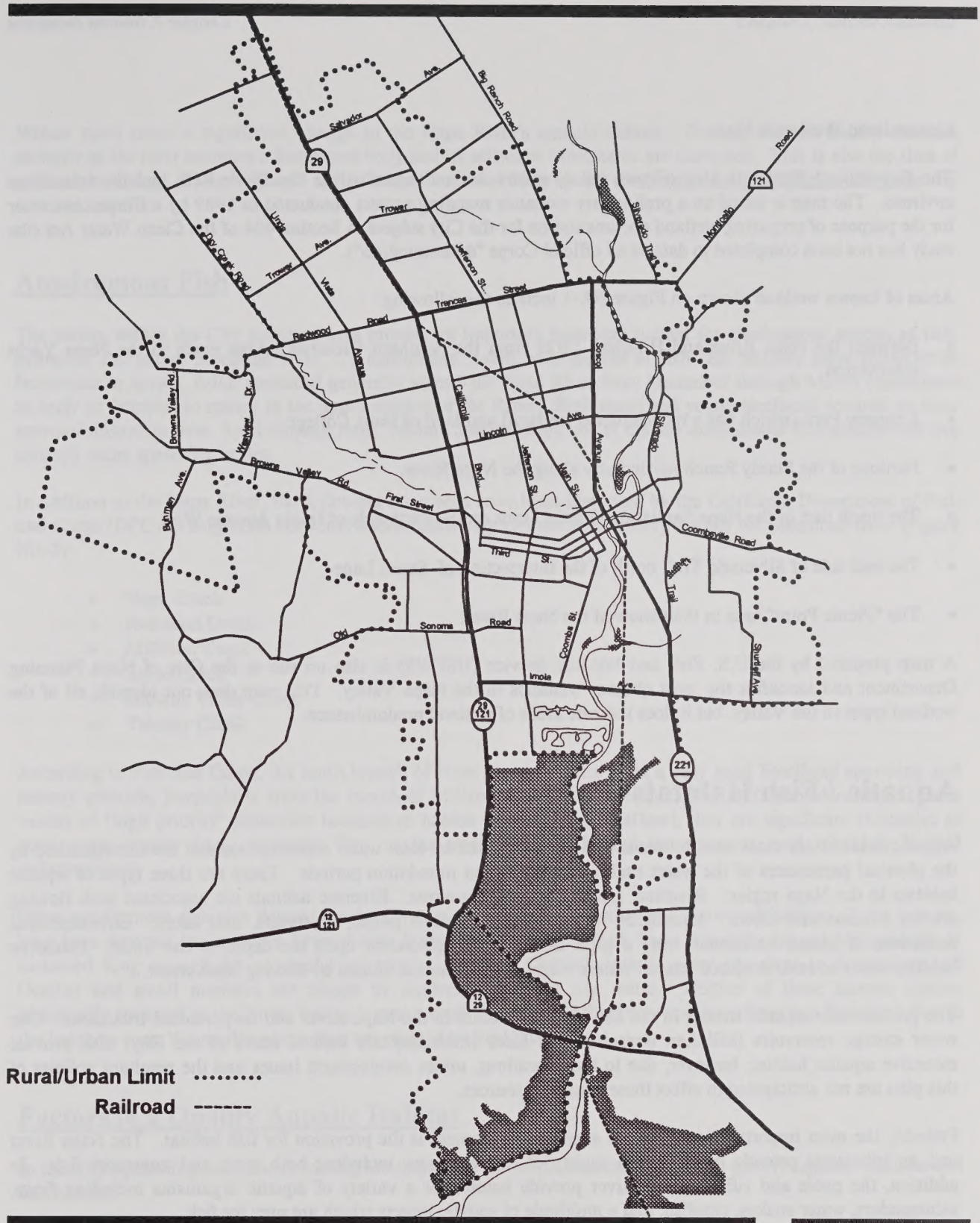
In the vicinity of the City, some brackish marsh remains north of Horseshoe Bend; however, most of the true saltmarsh areas occur south of the bend, outside the City of Napa limits. The only true remaining tidal saltmarsh in the area is at the mouth of Suscol Creek. Remaining undisturbed marsh areas are potentially restorable.

Seasonal Wetland:

Seasonal wetlands include seasonal marshes in the floodplain of creeks and rivers as well as isolated vernal pools. Seasonal wetlands are of particularly high value to several wildlife species. Ducks such as mallards, shorebirds such as killdeer and greater yellowlegs, and songbirds such as American pipit and red-tailed blackbirds use these areas for foraging. The grasses in seasonal wetlands often remain green and set seed later than surrounding upland areas, thereby providing seeds for species such as the western harvest mouse and house finch.

Vernal pools are a seasonal wetland habitat that supports a number of unique plant species including dwarf downingia, Contra Costa goldfields, Sonoma sunshine, and legenere. Fairy shrimp are often found in vernal pools, and the pools provide potential foraging habitat for insect eating birds (such as cliff swallows) and bats.

Seasonal wetlands and Vernal pools can be found in the floodplain of the Napa River and its larger tributaries and in the vicinity of freshwater bodies within the planning area. Numerous vernal pools/swale complexes are known to occur north of Green Island Road (south of the City); one particularly large one occurs on the east side of Highway 221 just outside the southeast limits of the City's RUL.



City of Napa General Plan Wetlands.DS4 12/98

Figure - NR 1

Generalized Wetlands

North

Wetlands

725' 1/2 Mile 1 Mile 3 Miles

0

Source: City of Napa Planning Department

While every effort has been made to insure the accuracy of the information shown on this page, the City of Napa assumes no responsibility for liability from any errors or omissions.

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Generalized Wetlands Map:

The Generalized Wetlands Map (Figure NR-1) shows wetland areas within the City's RUL and the immediate environs. The map is based on a preliminary wetlands mapping project conducted in 1989 by a Corps contractor for the purpose of preparing wetland documentation for the City subject to Section 404 of the Clean Water Act (the study has not been completed to date as an official Corps "determination").

Areas of known wetland shown on Figure NR-1 include the following:

- Between the Napa River and Highway 12/29 from the Southern Crossing bridge north to the Napa Yacht subdivision.
- Kennedy Park (which has a reconstructed wetland) and land of Napa College.
- Portions of the Stanly Ranch particularly along the Napa River.
- The north part of the Napa Sanitation District lands on the north side of Imola Avenue West.
- The east side of Silverado Trail north of the intersection of Sousa Lane
- The "Picnic Point" area in the oxbow of the Napa River.

A map prepared by the U.S. Fish and Wildlife Service (USFWS) is also on file at the City of Napa Planning Department and identifies the most obvious wetlands in the Napa Valley. This map does not identify all of the wetland types in the Valley, but it does indicate areas of wetland predominance.

Aquatic / Fish Habitats

Aquatic habitats are those environments that are dominated by total water submergence and are distinguished by the physical parameters of the water such as salinities and inundation periods. There are three types of aquatic habitats in the Napa region: Riverine, Lacustrine, and Estuarine. Riverine habitats are associated with flowing creeks, streams and rivers. Lacustrine habitats include inland ponds, reservoirs, and lakes. Environmental conditions of lacustrine habitats vary a great deal and are dependent upon the depth of the water. Estuarine habitats occur in semi-enclosed coastal waters where the seawater is diluted by flowing fresh water.

The predominant aquatic habitat in the City of Napa occurs in the Napa River and its perennial tributaries. City water storage reservoirs (Milliken Reservoir and Lake Hennessey are located north of the City) also provide extensive aquatic habitat; however, due to their locations, urban development issues and the resultant policies of this plan are not anticipated to affect these aquatic resources.

Probably the most important aspect of the aquatic environment is the provision for fish habitat. The Napa River and its tributaries provide habitat for a variety of fish resources including both sport and non-sport fish. In addition, the pools and riffles of the River provide habitat for a variety of aquatic organisms including frogs, salamanders, water snakes, crayfish, and a multitude of aquatic insects which are prey for fish.

Fish that are predominantly resident in the River as it passes through the heart of the City include black bass, sunfish, western sucker, carp, catfish and starry flounder. The most significant fishery is for striped bass which can be taken only in tidal waters (the Kennedy Park levee is a popular fishing spot). A small fishery exists in the upper reaches of tide water for carp. Other recreational fishing supported by the lower River includes sturgeon and catfish which moves downstream after the first fall rains. The River also supports many non-game species such as splittail, yellowfin goby and inland silversides.

Winter rains cause a significant change to the Napa River's aquatic habitat. Fishing success usually declines abruptly as the river becomes a freshwater body and its saltwater inhabitants are disrupted. This is also the time of year when treated sewage effluent is discharged into the River (such discharges are prohibited during the dry summer months).

Anadromous Fish

The waters within the City planning area provide an important spawning habitat for anadromous species of fish, primarily the native Steelhead trout. "Anadromous" refers to a species of fish that migrate from saltwater to freshwater to spawn. Adult steelhead generally ascend the Napa River from December through March (sometimes as early as October) to spawn in the upper reaches of the River. Both spent and young steelhead descend on their seaward migration from April through June. Mature Steelhead are one of the few anadromous fish species that live through many spawning cycles.

In addition to the Napa River, the following six creeks have been identified by the California Department of Fish and Game (DFG) as migration corridors and/or spawning and summer nursery habitat for Steelhead trout (Figure NR-2):

- Napa Creek
- Redwood Creek
- Milliken Creek
- Sarco Creek
- Browns Valley Creek
- Tulocay Creek

According to Fish and Game, the north branch of Napa Creek appears to be a very good Steelhead spawning and nursery grounds, particularly from the mouth of Milliken Creek downstream. The DFG considers these creeks worthy of "high priority" protection because, as habitat providers for Steelhead, they are significant indicators of good water quality (e.g., perennial flow in the upper watershed, cool temperatures, and relatively limited sedimentation).

Other anadromous fish also depend on the City's waterways for migratory and spawning habitat. King salmon, have been reported in the upper River during high winter flows, but such flows generally are not high enough or sustained long enough for successful spawning. Fall-run Chinook salmon enter the river in September and October and small numbers are caught by anglers, mainly in tide water. Neither of these salmon species historically spawned in the River, but each year a small number find their way upstream from San Francisco Bay to the hatchery near Yountville where they are planted by the DFG.

Factors in a Quality Aquatic Habitat

In the City's planning area, the following are important factors in maintaining a high quality aquatic resource and fish habitat:

a) Provision of a cold fresh water habitat to maintain healthy aquatic ecosystems.

b) Provision of fish migration routes and temporary aquatic environments, and recognition that any barrier (physical, thermal or chemical) relating to water quality can destroy the integrity of migration routes.

c) Freshwater replenishment which provides freshwater sources to replenish inland lakes and streams.

d) Provision of high quality habitats especially suitable for spawning.

e) Provision of estuarine habitats which provide essential and unique habitats that allow anadromous fishes to become acclimated when moving between fresh and marine waters.

Developed or Man-made Habitats

There are two types of Developed or Man-made Habitats in the Napa region, Agricultural (Orchard/Vineyard) and Urban Habitats. Though most of the Napa Valley vineyards are located in the alluvial soils of the valley floor, some are on the slopes of the surrounding rolling hills. Urban habitats are divided into five different wildlife habitat types: groves of trees, strips of trees along streets, shade trees in lawns, lawns and abandoned fields, and shrub cover. Many times man-made environments can provide habitat for the more adaptable and less sensitive plant and animal species.

Sensitive Habitats and Species

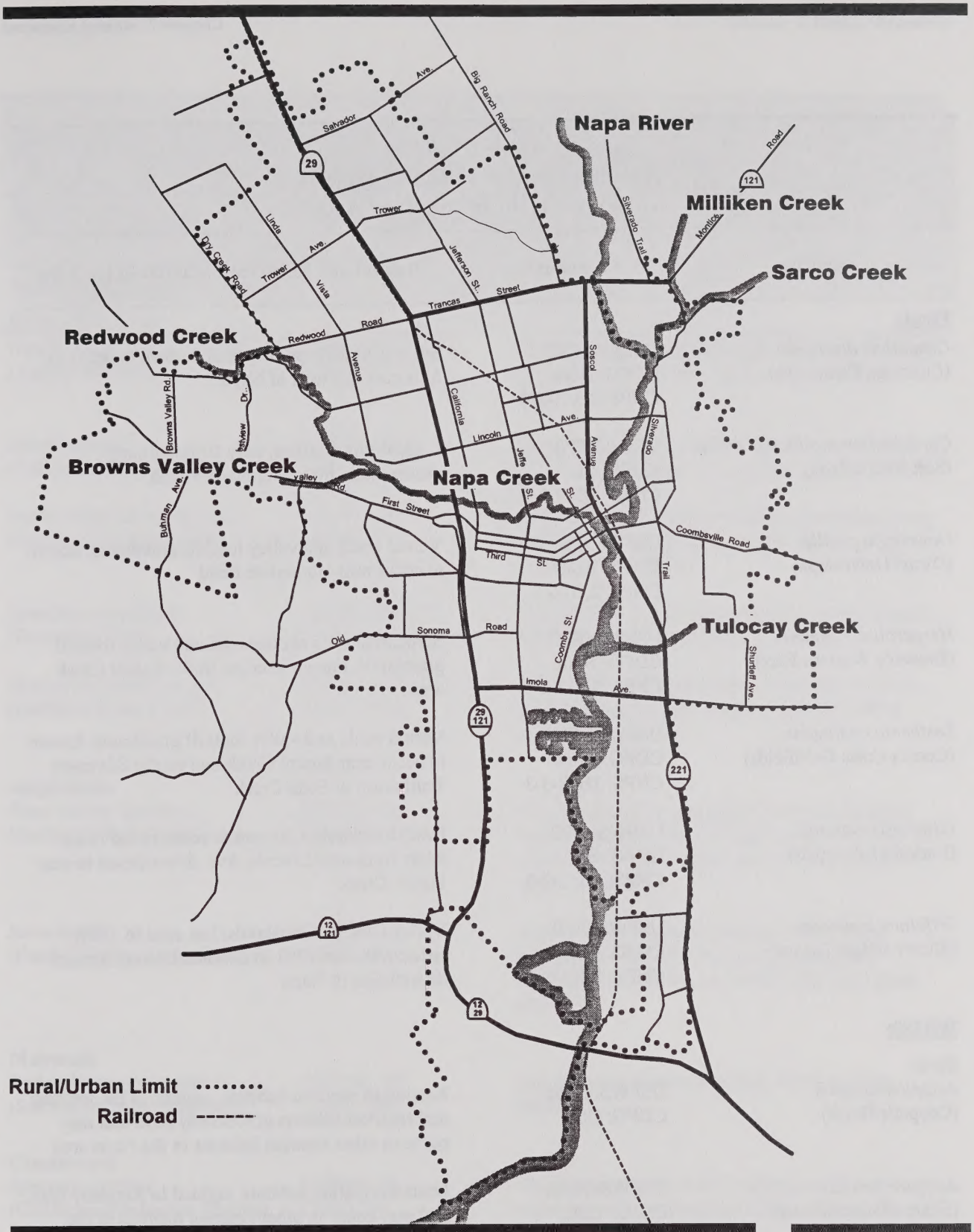
Plant and animal species are designated as sensitive because of their overall rarity, endangerment, restricted distribution, and/or unique habitat requirements. Sensitive plant communities and wildlife habitats are recognized by the City of Napa, CDFG, U.S. Fish and Wildlife Service (USFWS), and/or other federal and state agencies.

Federal and state Endangered Species Acts prohibit harming endangered and threatened animal species (see discussion under The Regulatory Environment). An "endangered" species is any species of plant, fish or wildlife in danger of extinction throughout all or a significant portion of its range. A "threatened" species is any species of plant, fish or wildlife that is likely to become endangered within the foreseeable future without special protection or management efforts. In California, the definition of these terms is limited to species or subspecies that are native to the state.

Another category is that of "sensitive" plant and animal species which are recognized by a number of federal and state agencies including the California Department of Fish and Game (DFG) and the U.S. Fish and Wildlife Service (USFWS). Sensitive plant and animal species include those species that are: 1) listed, or are candidates for listing, as threatened, endangered or rare by the USFWS and CDFG; 2) depleted or declining in population; or 3) limited in distribution or of unique characteristics. The sensitive plant and wildlife species known to occur in the immediate vicinity of the City of Napa are presented in Table NR-1 along with their legal status and habitat affinities.

The City's planning area contains wetland, riparian and woodland habitats that are known to have the potential to host sensitive plant and animal species. Although about 19 sensitive plant and wildlife species are known to occur in the Napa area, only Mason's lilaeopsis actually is known to occur in the City's planning area. Mason's lilaeopsis (also a rare and endangered plant) is a small semi-aquatic plant that grows in the silt-filled cracks of old rotting dock pilings along the Napa River (another rare and endangered plant, Cordylanthus mollis (Soft Bird's Beak), has been sighted in the Napa Marsh south of the City's planning area).

Although a number of rare or endangered animals have ranges that include or habitats that are found in the City's planning area, none except the salt marsh harvest mouse (mammal), the clapper rail (bird) and *Cordylanthus mollis* (Soft Bird's Beak), all of which have been sighted in the Napa Marsh, have actually been reported within the City's planning area.



Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan | Stelhead.DS4 | 12/98

Figure - NR 2

Steelhead Spawning Habitat - Napa River and Major Tributaries

North

Habitat

725' 1/2 Mile 1 Mile 3 Miles

0

Source: Department of Fish and Game

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Table NR-1
Sensitive Plant and Wildlife Species
Known to Occur in the Napa Area [1]

Species	Status [2]	Habitat and Reported Localities in the Area
Plants		
Ceanothus divergens (Calistoga Ceanothus)	USFWS: FSC CDFG: None CNPS: 1B, 3-2-3	Serpentine soils of chaparral, known to occur in hills east and west of Napa
Cordylanthus mollis ssp. mollis (Soft Bird's Beak)	USFWS:FPE CDFG: SR CNPS: 1B, 3-2-3	Coastal salt marshes; only 10 remaining occurrences, including Napa Marsh
Downingia pusilla (Dwarf Downingia)	USFWS: None CDFG: None CNPS: 2, 1-2-1	Vernal pools and valley foothill grasslands, known to occur near Horseshoe Bend
Hesperolinon breweri (Brewer's Western Flax)	USFWS: FSC CDFG: None CNPS: 1B, 2-2-3	Serpentine soils of chaparral and valley foothill grasslands, known to occur in the Suscol Creek area
Lasthenia conjugens (Contra Costa Goldfields)	USFWS: FPE CDFG: None CNPS: 1B, 3-3-3	Vernal pools and valley foothill grasslands, known to occur near Suscol Creek and on the Silverado Trail north of Soda Creek
Lilaeopsis masonii (Mason's Lilaeopsis)	USFWS: FSC CDFG: SR CNPS: 1B, 2-2-3	Brackish marshes, known to occur in the Napa River from near Lincoln Ave. downstream to near Suscol Creek
Trifolium amoenum (Showy Indian Clover)	USFWS: FPE CDFG: None CNPS: 1B, 3-3-3	Valley Foothill Grasslands; last seen in 1969, rediscovered in 1993 in Sonoma County; former distribution in Napa
Wildlife		
Birds		
Accipiter cooperi (Cooper's Hawk)	USFWS: None CDFG: CSC	Nesting in riparian habitats, sighted in the wetland and riparian habitats of Kennedy Park and may occur in other riparian habitats in the Napa area
Accipter striatus (Sharp-shinned Hawk)	USFWS: None CDFG: CSC	Nests in riparian habitats, sighted in Kennedy Park and may occur in other riparian habitats in the Napa area
Circus cyaneus (Northern Harrier)	USFWS: None CDFG: CSC	Nests in tall grasses and sedges of seasonal wetlands and grasslands, sighted in Kennedy Park

Table NR-1 (continued)
Sensitive Plant and Wildlife Species
Known to Occur in the Napa Area [1]

Species	Status [2]	Habitat and Reported Localities in the Area
Wildlife (continued)		
Birds (continued)		
Dendroica petechia brewsteri (Yellow Warbler)	USFWS: None CDFG: CSC	Nests in riparian habitats, sighted in Kennedy Park and may occur in other riparian habitats in the Napa area
Icteria virens (Yellow-breasted Chat)	USFWS: None CDFG: CSC	Nests in riparian habitats, known to nest in Napa County and may occur in Napa in riparian habitats
Rallus longirostris obsoletus (California Clapper Rail)	USFWS: FE CDFG: SE	Occurs in salt marshes and brackish marshes along California coast; breeding only in SF Bay area; inhabits Napa Marsh
Speotyto cunicularia (Burrowing Owl)	USFWS: None CDFG: CSC	Grasslands with ground squirrel burrows, reported sighting at Alston Park but not nesting
Strix occidentalis caurina (Northern Spotted Owl)	USFWS: FT CDFG: None	Old growth coniferous forest, reported in 1990 on slopes above Dry Creek, approximately 2 miles north of Alston Park
Amphibians		
Rana aurora draytonii (California Red-legged Frog)	USFWS: FT CDFG: CSC	In ponds and deep pools along creeks with dense vegetation cover; Napa is within this species range and suitable habitat occurs in some of the upper creek channels
Rana boylii (Foothill Yellow-legged Frog)	USFWS: FSC CDFG: CSC	Occurs in shaded rocky streams with shallow water, Napa is within this species range and suitable habitat occurs in some of the upper creek channels
Mammals		
Rethrodontomys ravientris (Salt Marsh Harvest Mouse)	USFWS: FE CDFG: SE	Salt marshes of San Pablo Bay; inhabits Napa Marsh
Crustaceans		
Syncaris pacifica (California Freshwater Shrimp)	USFWS: FE CDFG: SE	Creeks and streams with overhangs and clear water, reported in Huichica Creek south of the Napa area

Table NR-1 Footnotes

[1] Sources: CDFG 1991, July 1996; City of Napa 1986a, 1991, 1992b; Phillip Williams Associates 1990; Skinner, M.W. and B.M. Pavlik 1994; U.S.FWS 1996.

[2] Status:

FEDERAL DESIGNATIONS

- FE Listed as Endangered by the Federal Government
- FT Listed as Threatened by the Federal Government
- FPE Proposed as Endangered by the Federal Government
- FPT Proposed as Threatened by the Federal Government
- C Candidate for Federal listing (Taxa for which U.S. Fish and Wildlife Services has sufficient biological information to support a proposal to list as Endangered or Threatened)
- FSC Federal Species of Concern (No legal status)

CALIFORNIA DEPARTMENT OF FISH AND GAME DESIGNATIONS

- SE Listed as Endangered by the State of California
- ST Listed as Threatened by the State of California
- SCE California candidate for listing as endangered
- SR Listed as rare; not yet a candidate for other listings
- CSC CDFG "Species of Special Concern"

CALIFORNIA NATIVE PLANT SOCIETY DESIGNATIONS (SKINNER & PAVLIK, 1994)

- List 1 = Plants of highest priority
  - 1A = Plants presumed extinct in California
  - 1B = Plants rare and endangered in California and elsewhere
- List 2 = Plants rare and endangered in California, but common elsewhere
- List 3 = Plants about which we need more information
- List 4 = Plants of limited distribution (A watch list)

CNPS R-E-D Code

R (Rarity)

- 1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
- 2 = Occurrence confined to several populations or to one extended population.
- 3 = Occurrence limited to one or a few highly restricted populations, or present in such numbers that it is seldom reported.

E (Endangerment)

- 1 = Not endangered
- 2 = Endangered in a portion of its range
- 3 = Endangered throughout its range

D (Distribution)

- 1= More or less widespread outside California
- 2 = Rare outside California
- 3 = Endemic to California

Ecological/Study Areas

The John F. Kennedy Park marsh enhancement area is an outstanding example of a wetland habitat restoration that fulfills a regional need for interpretive public access to wetlands. This City-developed project includes a 13-acre seasonal wetland located behind the levees adjacent to the Napa River and a 4-acre duck pond and riparian area. Interpretive signs have been installed to explain about wetlands and their wildlife inhabitants.

The Connolly Ranch, acquired by the Napa County Land Trust in 1991, is located next to Westwood Hills Park at the intersection of Thompson Avenue and Browns Valley Road. The 12-acre site has been restored as an agricultural and environmental education center for the public. Also, working with the Napa Valley Unified School District, the Land Trust has developed an agricultural and environmental appreciation program involving elementary grade students.

AGRICULTURAL RESOURCES

The City of Napa is surrounded by the agricultural and open space lands of Napa County. Much of this agricultural land is highly productive, consisting of vineyards and truck crops (berries and deciduous and semi-tropical fruits). Other, less productive agricultural land consists of field crops, grain/hay crops and animal farms (e.g., dairy, horses and poultry). In general, the vineyards and small field crop farms are to the north, wooded foothills and rolling grasslands to the east and west, and marshlands, grazing lands and vineyards to the south.

History of Agricultural Resource Protection

In 1968, increasing urbanization pressures, recognition of the County's agricultural potential, and a concern for the future of that potential resulted in the creation of one of the first Agricultural Preserves in the nation. By the 1970's, viticulture had become the most important agricultural activity in Napa County.

The Napa Valley now is an irreplaceable viticultural resource. The unique combination of its particular characteristics of climate, soils and hydrology make it one of the finest grape growing areas in the world. It would be very difficult, perhaps impossible, to duplicate this combination if any of its contributing characteristics were impacted or destroyed by urbanization. Productive farmland and urbanization are not compatible and the impacts of urbanization on agricultural use are, for practical purposes, irreversible.

The County's General Plan strongly supports the concentration of urban uses within the City's existing urban area and out of the highly productive County agricultural lands around the City. The County's Zoning Ordinance implements this policy with two zoning districts to protect agricultural uses from urban encroachment, the Agricultural Preserve (AP) for the prime agricultural soils and the Agricultural Watershed (AW) for the lesser productive agricultural soils.

The City's Rural/Urban Limit Line (RUL) implements the City's policy to contain urban development within the area determined by the City's General Plan to be sufficient to accommodate the city's projected needs for housing, industrial, commercial and public service uses. The RUL is the principal implementation measure of the General Plan to prevent urban sprawl and protect the county agricultural and open space lands around the City. The concentration of urban development within the RUL is a direct result of these strong policies to protect Napa Valley's agricultural resources.

Agricultural Soils

The U.S. Soil Conservation Service (SCS) provides detailed information about the suitability of soils for agriculture and a system for classifying soils. The soil classification is meant for general planning purposes rather than as a basis for decisions on the use of specific sites. The "Soil Survey of Napa County, California" prepared by the U.S. Soil Conservation Service is a classification of Napa County soils for use in determining the capability for growing field crops. This classification system categorizes soils into eight classes based on their ability to sustain cultivated agriculture without damage to the soil resource itself. Figure NR-3 shows the distribution of soils in the Napa RUL. The Seismicity/Geology/Soils section of the Safety Chapter of this document provides a description of the land classifications used by the SCS.

City of Napa General Plan | Soil.ds4 | 12/98

Figure - NR 3

Soils Capability Classes for Croplands

North

725' 1/2 Mile 1 Mile 3 Miles

0

Soils-

Class I & II:

Class III & IV:

Class V - VIII:

Source: County of Napa Planning Department

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The broadest classification of soils is by "capability class" and indicates in a general way the capability of soils for most kinds of field crops. Capability classes are based on: 1) soil limitations when used for field crops; 2) response to treatment; and 3) risk of damage when used for agriculture. There are eight capability classes, from I to VIII with the increase in number indicating greater limitations and narrower agricultural use choices.

In general, Classes I through IV are considered to be best suited to cultivated agriculture, while Classes V through VIII are considered better suited to pasture, wildlife habitat, urban development, or other noncultivated agriculture. Classes I and II are considered "prime" agricultural soils, meaning that they represent a valuable non-renewable economic resource because they are the most productive soils. Much of the land in and around the City, particularly the relatively flat locations on the valley floor, contains Class I through IV soils.

The soil capability classes are combined into three general groups:

Group 1:
The "prime" field crop soils, consists of Class I (few use limitations) and Class II (moderate limitations reducing the choice of crops or requiring moderate conservation practices). These prime soils are a valuable non-renewable economic resource because of their productivity.

Class I and II soils (the prime agricultural soils) are found adjacent to the RUL at the following locations:

- Along Redwood Creek.
- The Dry Creek subdivision (west of Highway 29).
- The Springwood subdivision (east of Highway 29).
- Along the Napa River and Sarco Creek south of Trancas Street.
- North of Cayetano Drive and east of Terrace Drive.
- Portions of Browns Valley (Bell Meadows, Stonebridge and Rollingwood #1 subdivisions).

The City itself is located in the fertile flat land of the valley and is largely underlain by Class I and II soils in the central portion.

Group 2:
This grouping consists of Class III (severe limitations reducing the choice of crops and/or requiring special conservation practices) and Class IV (very severe limitations that reduce the choice of crops and/or require very careful management). Most of the flatter topography in and around the edges of the City consist of Class III and IV soils.

Group 3: Soils with limitations that preclude field crops comprise this group, consisting of Class VI through Class VIII soils(Class V does not occur in Napa County). These soils have limitations that preclude field crops and general limit uses to pasture, range woodland or wildlife habitat. Class VI-VIII soils are found on the steeper slopes in the City's planning area (e.g., along the RUL from Browns Valley Road to the intersection of Foster Road and Highway 121).

It is important to note that grapes, the most predominant and economically important field crop in the valley, have soil preferences that do not necessarily correspond to the SCS soil capability classification system. In general, on the valley floor, where soil is fertile and water readily accessible, grapes thrive and have high production. At the higher elevations, production is lower because the soil quality is lower and water less accessible. However, by using grape varieties more tolerant of or habituated to these less favorable growing conditions, it is still possible to produce high-value, premium crops.

Current County agricultural land use policies are directed toward preserving the most productive soil classes (Classes I through IV). In formulating City policy and implementation measures to help the County preserve the most productive agricultural lands around the RUL, the location of vineyards (existing and likely location) should be taken into account in combination with the SCS soil capability classes.

Farmland Classification

The State of California's Department of Conservation Farmland Mapping and Monitoring Program provides a classification system for soils based on their suitability for agricultural production considering such factors as crop type, water availability, and other factors. This system differs from the SCS classification system, which reflects only the physical and chemical characteristics of the soil. The purpose of the Department of Conservation mapping system is to provide a current inventory of agricultural land resources. The State Farmland maps are based on air photos and detailed field reconnaissance. The smallest farmland area mapped is 10 acres and the smallest grazing land area mapped is 40 acres. The six State Farmlands program categories as shown on Figure NR-4 include:

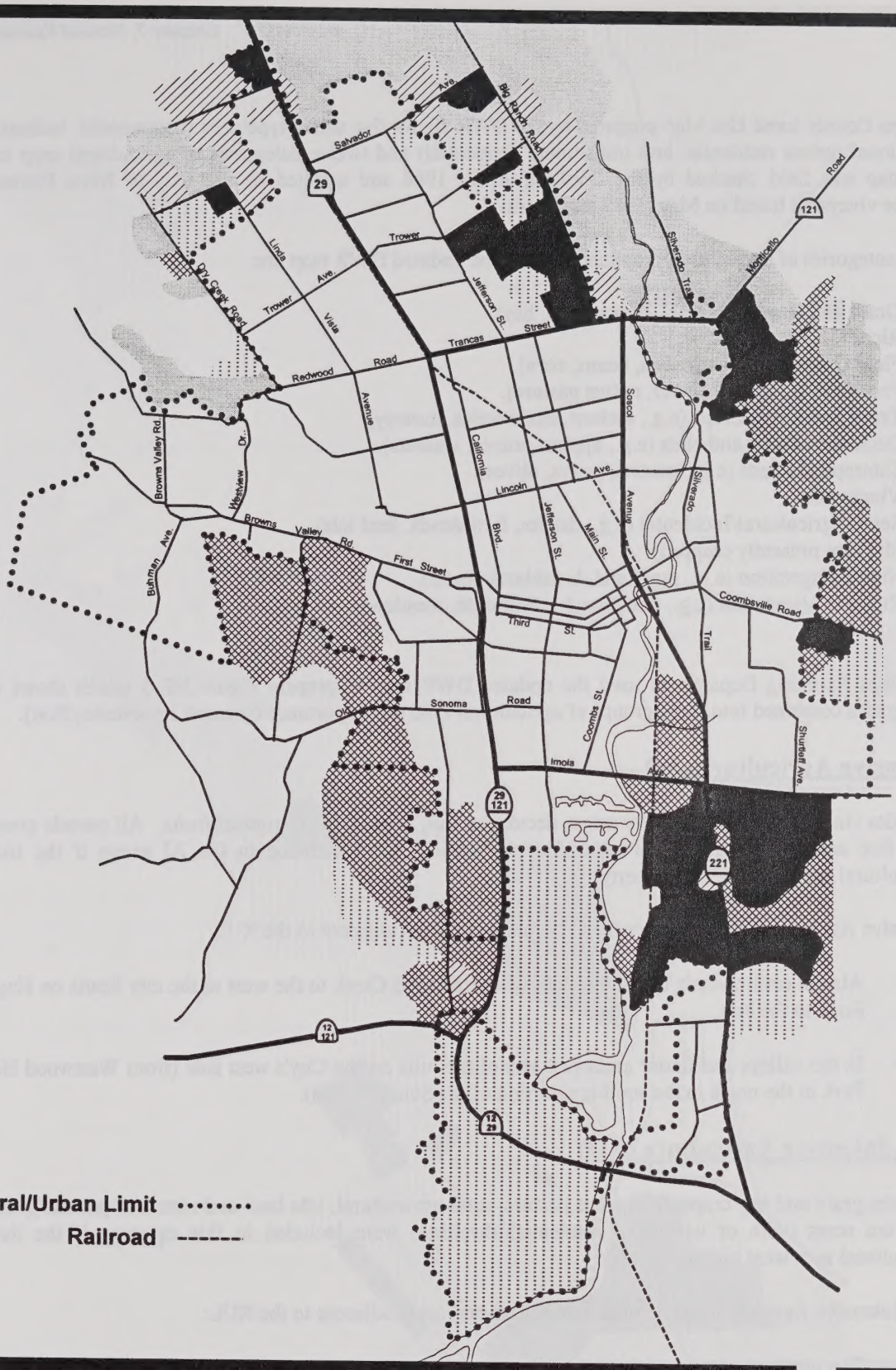
- **Prime Farmlands** - lands with the best combination of factors for the production of agricultural crops
- **Farmlands of Statewide Importance** - land , other than "Prime Farmland", used for the production of irrigated crops within the last three years which has a good combination of physical and chemical characteristics for production of crops.
- **Unique Farmlands** - lands that are not "Prime" or of "Statewide Importance" that are currently used for the production of specific high economic value crops; having a special or unique combination of factors needed to produce such a crop.
- **Farmlands of Local Importance** - lands of importance to the local agricultural economy as recommended to the State by the County Board of Supervisors.
- **Grazing Lands** - land on which the existing vegetation and terrain is suitable to the grazing of livestock
- **Urban and Built-up Lands** - lands occupied by structures and infrastructure with a building density of at least 1 to 1.5 acres

Lands that do not meet the criteria of any other Farmland category are identified as "***Other Lands***".

The Resource Agency's notes on the Important Farmland Map state that the map does not necessarily reflect local general plan actions, urban needs, changing economic conditions, proximity to market, or other factors that generally are taken into consideration when formulating agricultural land use policies.

Napa County Agriculture Land Use

The California Department of Water Resources (DWR) maps agricultural crop land uses in various categories as part of its "County Land Use" maps. The information on the maps is derived from air photos and field inspections. Non-crop uses such as dairies, feedlots, farmsteads (e.g., rabbit, poultry, etc. production) are not mapped as such but as pasture, rangeland, native vegetation or other appropriate vegetation category.



Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan

Statefrm.DS4

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Figure - NR 4

State Farmlands Classification

North

725' 1/2 Mile 1 Mile 3 Miles

0

Prime Farmland

Farmland of Statewide Importance

Farmland of Local Importance

Urban/Built-Up Land

Other land

Source: County of Napa Planning Department

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The 1987 Napa County Land Use Map prepared by the DWR shows five urban-type uses (commercial, industrial, public/institutional, urban residential and transitional residential) and twelve categories of agricultural crop land uses. This map was field checked by the DWR in April, 1988 and updated by the City of Napa Planning Department for vineyards based on May, 1989 air photos.

The 12 major categories of agricultural crop land uses on the updated DWR map are:

1. Grain and Hay Crops (e.g., barley, oats, hay).
2. Rice.
3. Field Crops (e.g., sunflowers, beans, corn).
4. Pasture (e.g., alfalfa, clover, native pasture).
5. Truck and Berry Crops (e.g., melons, bushberries, nursery).
6. Deciduous Fruits and Nuts (e.g., apples, prunes, walnuts).
7. Subtropical Fruits (e.g., lemons, guava, olives).
8. Vineyards.
9. Semi-Agricultural/Incidental (e.g., dairies, farmsteads, feed lots).
10. Idle (not presently cropped).
11. Native Vegetation (e.g., grassland, brushland, forest).
12. Riparian Vegetation (e.g., marshland, streamside, meadow).

The City of Napa Planning Department used the updated DWR map to prepare Figure NR-5 which shows the above 12 categories combined into three groups of agricultural land use importance (greatest importance first):

Intensive Agriculture (AI)

Includes vineyards, truck and berry crops, deciduous fruit trees and sub-tropical fruits. All parcels greater than five acres (with or without a residential dwelling) were included in the AI group if the listed agricultural uses were on the property.

Intensive Agriculture land use occurs in the following areas adjacent to the RUL:

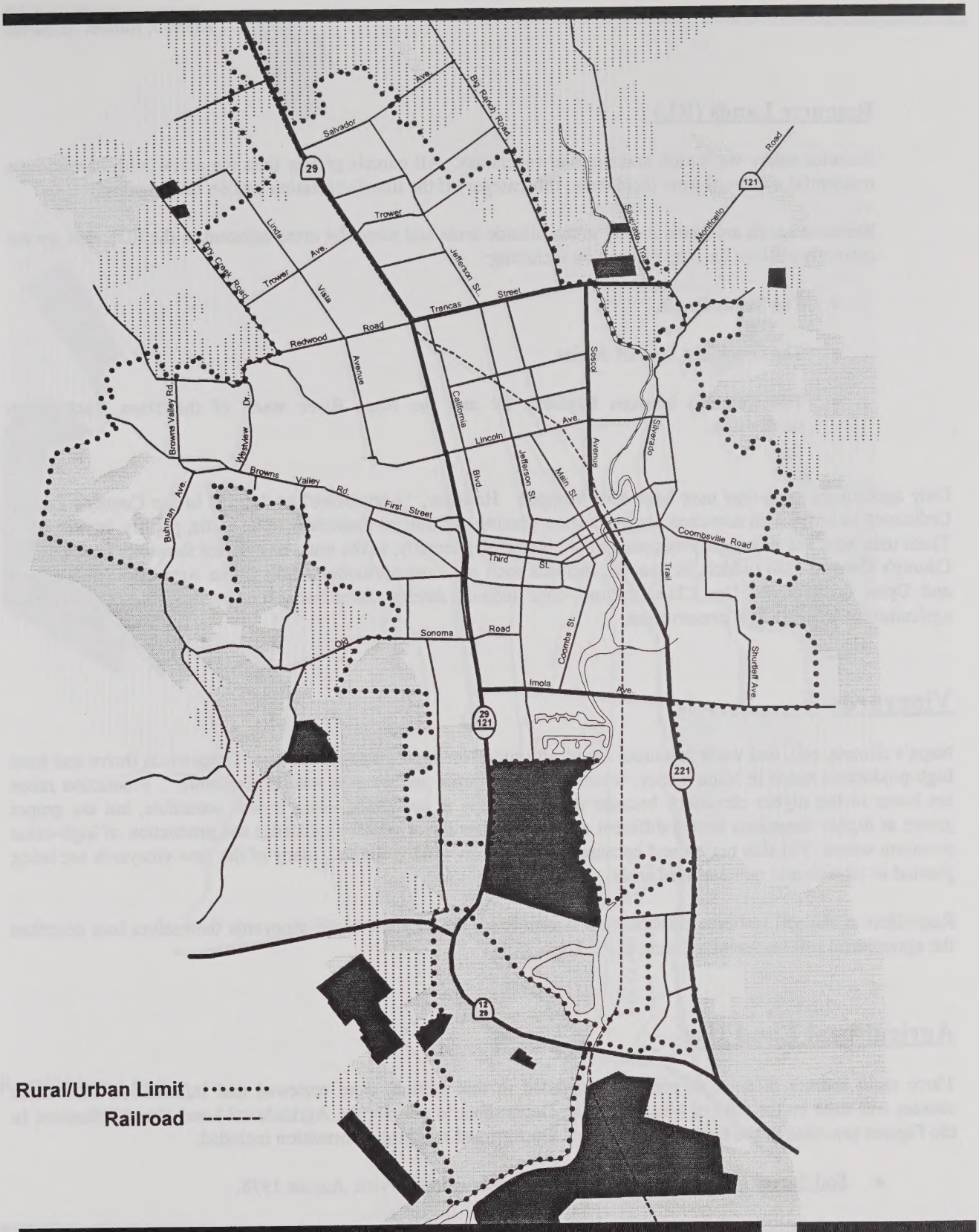
- Almost continuously along the RUL from Redwood Creek to the west to the city limits on Hagen Road to the east.
- In the valleys and flatter areas just east of the hills on the City's west side (from Westwood Hills Park to the north to the southern portion of the Stanly Ranch).

Non-Intensive Agriculture (AO)

Includes grain and hay crops, field crops pasture, semi-agricultural, idle land and rice. All parcels greater than ten acres (with or without a residential dwelling) were included in this category if the listed agricultural uses were on the property.

Non-Intensive Agriculture land use is found in several areas adjacent to the RUL:

- The northern portion of the River West Planning Area.
- Along the southeast portion of the Stanly Ranch.
- On the east side of the Napa River just north of Trancas Street.



City of Napa General Plan | Agimport.DS4 | 12/98

Figure - NR 5

Agricultural Land Use Importance

North

725' 1/2 Mile 1 Mile 3 Miles

0

Intensive Agriculture

Non-Intensive Agriculture

Resource Lands

Source: County of Napa Planning Department

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Resource Lands (RL)

Includes native vegetation and riparian vegetation. All parcels greater than ten acres (with or without a residential dwelling) were included in this category if the listed vegetation was on the property.

Resource Lands are found mostly in the hillside areas and some flat areas adjacent to the RUL that are not currently utilized for crop production including:

- The Stanly Ranch.
- The Lewis and Stewart dairies.
- The wetlands between Highway 29 and the Napa River south of the Napa Yacht Club subdivision.

Only agricultural crop-type uses have been mapped. However, "Agriculture" as defined in the County's Zoning Ordinance includes such non-crop uses as dairies, grazing and animal husbandry (e.g., cattle, poultry, horses, etc.). These uses were not specifically mapped but are included, generally, in the areas designated *Resource Lands*. The County's General Plan (which, in general, includes such non-crop agricultural uses in the Agriculture, Watershed and Open Space Land Use Classification) does include dairies, farmsteads (husbandry), etc. as important agricultural uses worthy of preservation.

Vineyards

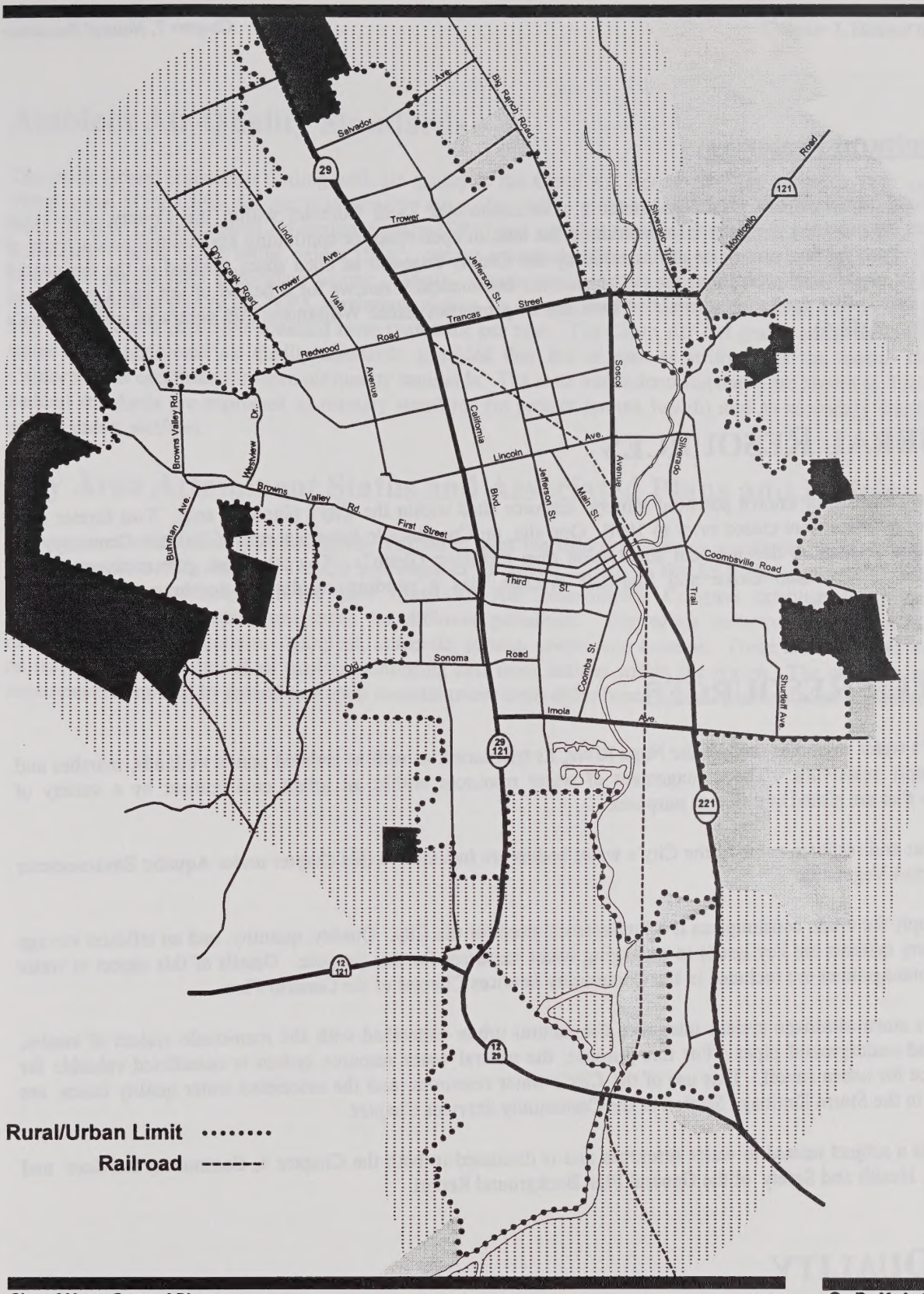
Napa's climate, soil, and water resources are ideally suited for wine grape production. Grape vines thrive and have high production ratios in Napa Valley, where the soil is fertile and water is readily accessible, . Production ratios are lower in the higher elevations because the soil quality is lower and water is less accessible, but the grapes grown at higher elevations have a different and often better flavor which contributes the production of high-value premium wines. For this reason and because suitable valley land is limited, many of the new vineyards are being planted in hillside and mountainous areas.

Regardless of the soil resource classification system used, the location of the vineyards themselves best describes the agricultural soil resources adjacent to the Napa RUL.

Agricultural Land Use

Three main sources of data, as previously detailed in this section, were reviewed and information from these sources was used by the City of Napa Planning Department to prepare the Agricultural Land Use delineations in the Figures provided in the Background Report. Background mapping information included:

- Soil Survey of Napa County, U.S. Soil Conservation Service, August 1978.
- Napa County Important Farmland Map, California Department of Conservation's Resource Agency, July 1986.
- Napa County Land Use, 1987-88, California Department of Water Resources.



Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan | Cntyzon.DS4 | 12/98

Figure - NR 6

County Land Use Designations

North

Agricultural

Non-Agricultural

Under Willamson Act Contract

725' 1/2 Mile 1 Mile 3 Miles

0

Source: County of Napa Planning Department

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Agricultural Preserves

Agricultural preserves are properties under a Williamson Act Land Contract within the County, where tax incentives are provided in return for maintaining the land in open space or continuing agricultural productivity of the land. Participating properties are assessed by the County Assessor as open space, instead of the designated land use or as the land's potential use. The contract automatically renews for a period of ten years, unless the property owner files for "non-renewal." There are no properties under Williamson Act contracts within Napa's RUL. (Figure NR-6)

MINERAL RESOURCES

There are no active or known potential mineral resource sites within the City's planning area. Two former rock and gravel quarries were closed prior to 1970. One site, on Coombsville Road just east of Tulocay Cemetery, has an approved residential development subdivision map ("Hidden Glenn"). The other site, just southeast of the intersection of Cayetano Drive and Shurtleff Avenue, has a pending residential development application ("Greystone Estates").

WATER RESOURCES

The City's water resources include the Napa River, its tributaries, as well as isolated ponds wetlands, marshes and water supply reservoirs. The management of water resources within an urban environment by a variety of objectives that are aimed at different purposes.

The habitat and resource value of the City's water bodies are included in this chapter under Aquatic Environments and Riparian Vegetation.

Water supply for urban consumption is a fundamental need for the City. Quality, quantity, and an efficient storage and delivery systems are key issues in managing water resources for this purpose. Details of this aspect of water resource management are included in the Community Services Chapter of the General Plan.

The City's storm drainage system integrates the natural urban watershed with the man-made system of swales, ditches and underground pipes. For this purpose, the natural water resource system is considered valuable for conveyance for urban runoff. This use of the City's water resources, and the associated water quality issues, are discussed in the Storm Drainage Section of the Community Services Chapter.

Flooding is a subject related to water resources and is discussed in both the Chapter 4, Community Services and Chapter 8, Health and Safety of the General Plan Background Report.

AIR QUALITY

This section presents a discussion of the existing air quality in the Napa Valley area and the current air quality regulations affecting the City of Napa. In addition, this section describes the Bay Area Air Quality Plan, whose purpose is to attain and maintain compliance with national ambient air quality standards in the Bay Area.

Ambient Air Quality Standards

The main federal legislation dealing with air quality is the Clean Air Act of 1970, as amended 1977 and 1990. The purpose of the Clean Air Act is to preserve air quality and to protect the public's health and welfare. To that end, the U.S. Environmental Protection Agency (EPA) has established air quality standards for six primary air pollutants: ozone (O_3), sulfur oxides (SOx), carbon monoxide (CO), nitrogen dioxide (NO_2), lead (Pb), and respirable (breathable) particulate matter (PM_{10}). These standards are known as the National Ambient Air Quality Standards (NAAQS). EPA regulations dictate, in general, that levels of pollutants in any area of the U.S. may not exceed a particular standard more than once per year. The Clean Air Act grants authority to individual states to set additional air quality standards, provided they are at least as stringent as the federal standards. California has established its own air quality standards. The state and federal standards are shown in Table NR-2. Federal standards are expressed as primary standards (to protect human health) and as secondary standards (to protect public welfare).

Bay Area Attainment Status and Associated Plans and Policies

In many parts of the country has consistently failed to meet the federal air quality standards. Areas of the country that do not attain the federal NAAQS are required to submit a plan to the EPA that presents a strategy for complying with standards. In the 1990 Clean Air Act Amendments, Congress established a hierarchy of classifications for nonattainment areas for different pollutants. For ozone nonattainment areas, Congress established five classifications: marginal, moderate, serious, severe, and extreme. These classifications are based on review and evaluation of air quality monitoring data from stations within the region. The emission reduction requirements imposed by federal law upon nonattainment areas differ based on the nonattainment classification.

Table NR-2
State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard(1) Concentration	National Standards(2) Primary	National Standards(2) Secondary
Ozone	1-Hour	0.09 ppm	0.12 ppm	Same as Primary Standards
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm 20 ppm	9 ppm 35 ppm	Same as Primary Standards
Nitrogen Dioxide	Annual Average 1-Hour	None 0.25 ppm	0.053 ppm(3) None	Same as Primary Standards
Sulfur Oxides, measured as SO_2	Annual Average 24-Hour 3-Hour 1-Hour	None 0.04 ppm None 0.25 ppm	0.03 ppm(3) 0.14 ppm None None	None None 0.5 ppm
Suspended Particulate Matter (PM_{10})	Annual Geometric Mean 24-Hour	30 $\mu g/m^3$ 50 $\mu g/m^3$	50 $\mu g/m^3$ 150 $\mu g/m^3$	Same as Primary Standards None
Sulfates	24-Hour	25 $\mu g/m^3$	None	None
Lead	30-Day Average Calendar Quarter	1.5 $\mu g/m^3$ None	None 15 $\mu g/m^3$	None Same as Primary Standards
Hydrogen Sulfide	1-Hour	0.03 ppm	None	None
Vinyl Chloride	24-Hour	0.010 ppm	None	None
Visibility Reducing Particles	1 Observation	In sufficient amount to reduc the prevailing visibility to less than 10 miles when the relative humidity is less than 70%	None	None

Notes:
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
1) CO, SO_X (1-Hour), NO_2, O_3, and PM_{10} standards are not to be exceeded. All other standards are not to be equaled or exceeded.
2) Standard with averaging times of less than one year are not to be exceeded more than once a year (except for annual standards).
3) Annual arithmetic mean.

Air quality conditions in the Bay Area have improved significantly since the BAAQMD was created in 1955. However, Table NR-3, Bay Area Attainment Status as of April 1996, show that California standard attainment status has not been achieved yet for ozone and PM_{10} (particulate matter 10 microns or less in diameter), and that national standard attainment status has not been achieved yet for carbon monoxide in urban areas over an 8 hour averaging time period.

Ozone

The formation of ozone (O_3), or smog, is greatest on warm, windless, sunny days. Ozone is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between oxides of nitrogen (Nox) and reactive organic gases (ROG) in the presence of sunlight. The main sources of Nox and ROG (ozone precursors) are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints and fuels. Automobiles are the single largest source of ozone precursors in the Bay Area.

Exposure to ozone causes eye irritation, shortness of breath, aggravates respiratory diseases and can permanently damage lung tissue if exposure is long enough. Ozone also damages plants and material such as rubber and fabrics.

The Bay Area is currently designated as a federal moderate nonattainment area for ozone. However, no single air monitoring station in the Bay Area's network of ambient air monitoring stations has registered more than one exceedance of the ozone standard in the past three years. As required by the Clean Air Act, BAAQMD submitted to EPA the *Non-Attainment Area Rate of Progress Plan for the National Ozone Standard* (BAAQMD 1993a). In August 1993, the BAAQMD applied for redesignation as a federal ozone attainment area. In June the region was redesignated as an attainment area for the national ozone standard, the largest metropolitan region in the country to have achieved that distinction. The Bay Area continues to be in nonattainment of the state ambient air quality standard for ozone, which is lower (more stringent) than the federal standard.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas formed by the incomplete combustion of fuels. The single largest source of carbon monoxide is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving and when a vehicle is moving at low speeds.

Carbon monoxide combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This is especially critical for people with cardiovascular diseases and chronic lung disease or anemia, and for fetuses.

The Bay Area is also currently designated a nonattainment area for both the federal and state CO standards. Between 1988 and 1991, the federal CO standard was exceeded at the San Jose 4th Street air quality monitoring station. No exceedances of the federal CO standard have been recorded since 1991. Winter 1993-1994 CO measurements in the Bay Area also did not exceed the federal standard. The BAAQMD has applied for redesignation as a Federal CO attainment area for carbon monoxide. In the meantime, BAAQMD, the Association of Bay Area Governments (ABAG), and the Metropolitan Transportation Commission (MTC) have developed a required attainment plan (BAAQMD 1993b) and attainment contingency plan for the national CO standard (BAAQMD 1993c). These documents contain strategies for attaining the CO standard by December 31, 1995 and a contingency plan in the event that the standard is not met by this date.

Other Pollutants

PM_{10} is category of pollutant refers to fine particulate matter including a range of solid or liquid particles in the atmosphere (pollen smoke, dust, aerosols, metallic oxides, etc.). Some of these occur naturally, but most or this particulate matter in the Bay Area is caused by combustion, factories, construction, grading, demolition, agricultural activities and motor vehicles. This type of pollutant is expected to increase in the Bay Area as motor vehicle use increases as a result of road dust, construction and agricultural uses. Wood burning fireplaces in

Table NR-3
Bay Area Attainment Status as of April 1996

		California Standards[1]		National Standards[2]	
Pollutant	**Averaging Time**	**Concentration**	**Attainment Status**	**Concentration**	**Attainment Status**
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	N	0.12 ppm (235 µg/m^3)	A[3]
Carbon Monoxide	8 Hour	9.0 ppm (10 mg/m^3)	A	9 ppm (10 mg/m^3)	Urban[4] areas N[5] Rural areas A
	1 Hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m3)	A
Nitrogen Dioxide	Annual Average	-	-	0.053 ppm (100 µg/m^3)	A
	1 Hour	0.25 ppm (470 µg/m^3)	A	-	-
Sulfur Dioxide	Annual Average	-	-	80 µg/m^3 (0.03 ppm)	A
	24 Hour	0.04 ppm (105 µg/m^3)	A	365 µg/m^3 (0.14 ppm)	A
	1 Hour	0.25 ppm (655 µg/m^3)	A	-	-
Suspended Particulate Matter (PM_{10})	Annual Arithmetic Mean	-	-	50 µg/m^3	A
	Annual Geometric Mean	30 µg/m^3	N	-	-
	24 Hour	50 µg/m^3	N	150 µg/m^3	U

A= Attainment **N**= Nonattainment **U**= Unclassified
ppm = parts per million **mg/m3** = milligrams per cubic meter **µg/m3** = micrograms per cubic meter

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and PM_{10} are values that are not to be exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average, then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on the average.

2. National standards other than for ozone and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. For example, the ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one.

3. In June 1995 the Bay Area was redesignated to attainment for the national ozone standard.

4. Urbanized areas as defined by U.S. Department of Commerce, Bureau of Census, 1980 Census of Population and Housing, Block Statistics Maps for San Jose and Vallejo-Fairfield-Napa SMSAs.

5. The BAAQMD has applied for attainment status for carbon monoxide, No BAAQMD monitoring station has recorded an exceedance of the national CO standard since 1991.

Source: BAAQMD CEQA Guidelines - April 1996

stoves is another large source of particulate matter. Results of a recent monitoring program in San Jose shoed that wood smoke contributed up to 40% of the particulate mix during the winter months.

Because PM_{10} consists of very fine particles, it bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. Extended exposure to the type of pollutant can increase the risk of chronic respiratory disease, and high levels in the atmosphere have been associated with increased emergency room visits and hospital admissions. Studies of PM_{10} have estimated that from 200 to 500 deaths annually in the Bay Area occur from elevated PM_{10} levels in the air.

The Bay Area is in attainment of all other federal air quality standards. The area demonstrates exceedances of the state PM_{10} standard, however, and is therefore not in attainment of this standard.

The Bay Area Air Quality Plan and MTC Resolutions on Conformity

BAAQMD is the local agency responsible for state and federal air quality requirements. To achieve and maintain compliance with federal and state air pollution standards, the Bay Area Air Quality Management District and ABAG adopted an Air Quality Management Plan in 1982 to identify pollution sources, quantify present emissions, estimate future emissions and study pollution control strategies for the attainment and maintenance of federal and State standards. State and federal ambient air quality standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter and lead. State standards are more stringent that federal standards for ozone and particulate matter.

Federal enforcement responsibility is the result of EPA approval of the 1982 Bay Area Air Quality Plan (referred to as the 1982 Plan), also known as the State Implementation Plan or SIP, which indicates how BAAQMD will implement federal air quality requirements. BAAQMD adopted a Clean Air Plan in 1991 to implement the requirements of the California Clean Air Act of 1988. Since the 1982 Plan is the federally-approved plan, the conformity provisions of the 1990 Clean Air Act Amendments specify the conditions under which transportation plans, programs, and projects will be considered in conformance with the 1982 Plan and the Clean Air Act.

As the regional transportation planning organization (known as the Metropolitan Planning Organization, or "MPO") for the Bay Area, MTC is responsible for ensuring that the Bay Area Regional Transportation Improvement Program (TIP) (MTC 1993b) and Regional Transportation Plan (RTP) (MTC 1993c) conform with the SIP. In November 1990, amendments to the Clean Air Act (described below) were passed that provided new direction for reviewing air quality effects of transportation projects. In April 1991, MTC adopted Resolution No. 2270 (MTC 1991) in order to comply with new amendments. The objective of Resolution No. 2270 is to ensure that a project's air quality effects conform to the SIP, and to ensure the project's consistency with transportation control measures. The resolution contains two key appendices, the first being the *Conformity Assessment Procedures*, which MTC has used to establish that the TIP and RTP are in conformity with the 1982 Plan and the Clean Air Act. The second appendix is the *Criteria for Project Conformity*, which establishes the criteria and conformity assessment procedures for individual transportation projects.

Ambient Air Quality - Meteorology and Climate

Air quality at a given location is a function of several factors. These factors include the amount and types of pollutants being emitted into the air, both locally and regionally, and the dispersion, or mixing rate, of pollutants within the region. The major factors affecting pollutant dispersion are wind speed and direction, atmospheric conditions (stability), temperature, the presence or absence of inversions, and the topographic and geographic features of the region.

The climate of the City of Napa is characterized by warm and dry summers and mild and wet winters. A semi-permanent high pressure area, known as the Pacific High, is located in the eastern Pacific Ocean. In the summer, this pressure center causes storms north of California. When the Pacific High moves southward during the winter, low pressure storms are brought into the region, causing widespread precipitation. In the City of Napa, the months of heaviest precipitation are November through April. The annual average rainfall, measured at the Napa State Hospital meteorological station, is 24.34 inches. The mean temperature is 58.6°F, and the mean maximum and mean minimum temperatures are 71.6°F and 45.5°F, respectively (National Oceanic and Atmospheric Administration 1982).

The predominant wind direction in the area is northwesterly, with an average annual wind speed of 4.6 miles per hour. During summer and fall months, the prevailing northwesterly flow is channeled through the San Francisco Bay where the flow diverges and takes on a strong southerly component in Napa. During the winter months, the prevailing wind pattern is from the northwest, while the spring period marks a transition from primarily northwesterly flow to a more pronounced southerly component in summer (California Air Resources Board [CARB] 1989).

The Pacific High also influences the wind patterns of California and helps to create temperature inversions. These inversions can trap pollutants near the ground, causing an increase in ambient pollutant concentrations. They are absent during the winter. However, a local inversion, caused by cooling air near the ground surface, may develop in some areas (typically valley floors of hilly terrain) during the evening and early morning hours. The combined factors of light winds, hilly terrain and radiation inversion effects that restrict horizontal dispersion of air movements produce a potential for air pollution buildup. The local upslope and downslope flows created by the surrounding mountains may also recirculate pollutants already present, thereby adding to the total burden..

The Napa Valley is bordered by relatively high mountains with an average ridge line height of about 2,000 feet. These mountains are effective barriers to the prevailing northwesterly winds. However, air pollution potential in the Napa Valley could be high if there were sufficient sources of air contaminants nearby. Summer and fall prevailing winds can transport ozone precursors northward from the Carquinez Strait Region to the Valley, effectively trapping and concentrating air pollutants when stable conditions are present. These pollutants can be recirculated by airflows created by the local upslope and downslope conditions. The high frequency of light winds and stable conditions during the late fall and winter contribute to the buildup of particulate matter from automobiles, agricultural burning and woodburning in fireplaces and stoves. Carbon monoxide has not been a problem in recent years, but it too could increase with growth of population and tourist travel in the valley. Ozone buildup is a potential problem to sensitive crops such as wine grapes, as well as to human health

The BAAQMD operates air quality monitoring stations throughout the region. The Napa station is located at 2552 Jefferson Street, which is centrally located within the planning area. The Napa station monitors O_3, CO, NO_2, and PM_{10}. According to the BAAMQD's 1990 Summer Average Emissions Inventory, the Napa Valley accounted for 3 percent of the District's overall PM10 emissions, 2 percent of it's overall NO2, 2 percent of its overall CO, and 3 percent of its overall O3 (BAAQMD 1993). Table NR-4 provides a summary of the ambient air quality measured at the Napa air quality monitoring station for the five-year period between 1988 and 1992.

Health Effects of Air Pollutants

Air pollutants are recognized to have a variety of health effects on humans. Health effects related to Ozone, Carbon Monoxide and particulate matter have already been discussed in this section. Research by the CARB shows that exposure to high concentrations of air pollutants can trigger respiratory diseases, such as asthma, bronchitis and other respiratory ailments, and cardiovascular diseases. A healthy person exposed to high concentrations of air pollutants may become nauseated or dizzy, develop a headache or cough, or experience eye irritation and/or a burning sensation in the chest. When air pollutant levels are high, children, the elderly, and people with respiratory problems are advised to remain indoors. Outdoor exercise also is discouraged because strenuous activity may cause shortness of breath and chest pains.

Table NR-4 Ambient Air Quality SummaryNapa Monitoring Station on Jefferson Street

Pollutant	Average Time	California Air Quality Standards	Federal Primary Standards	Maximum Concentrations ppm (a)					Number of Days Exceeding Federal Standard (b)					Number of Days Exceeding State Standard (b)				
				1988	1989	1990	1991	1992	1988	1989	1990	1991	1992	1988	1989	1990	1991	1992
Ozone (c)	1 hr	0.09 ppm	0.12 ppm	0.10	0.10	0.09	0.11	0.09	0	0	0	0	0	1	2	0	3	0
Carbon Monoxide	1 hr	20 ppm	35 ppm	11.0	12.0	10.0	9.0	8.0	0	0	0	0	0	0	0	0	0	0
	8 hrs	9.0 ppm	9 ppm	6.0	5.4	7.1	5.8	5.3	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide	1 hr	0.25 ppm	None	0.08	0.09	0.07	0.08	0.06	0	0	0	0	0	0	0	0	0	0
	Annual	None	0.053 ppm	0.018	0.017	0.017	0.017	0.015	0	0	0	0	0	NR	NR	NR	NR	NR
Sulfur Oxides measured as SO_2	1 hr	0.25 ppm	None	0.03	0.05	0.03	0.04	0.04	0	0	0	0	0	0	0	0	0	0
		24 hrs	0.04 ppm (e)	0.14 ppm	0.013	0.017	0.012	0.016	0.013	0	0	0	0	0	0	0	0	0
	Annual	None (f)	0.03 ppm	0.001	0.003	0.001	0.002	0.002	0	0	0	0	0	NR	NR	NR	NR	NR
Suspended Particulate Matter (PM_{10}) (d)	24 hrs	50 $\mu g/m^3$	150 $\mu g/m^3$	109	97	117	100	74	0	0	0	0	0	4	9	8	11	5
	Annual	30 $\mu g/m^3$	50 $\mu g/m^3$	29.4	27.9	27.9	27.9	23.9	0	0	0	0	0	0	0	0	0	0

Source: Bay Area Air Quality Management District and California Air Resources Board, 1988, 1989, 1990, 1991, and 1992 (CARB 1988-1992). The ozone, carbon monoxide, nitrogen dioxide and particulate matter (PM_{10}) data are collected at the Napa station; the sulfur dioxide data are collected at the San Francisco station at 10 Arkansas Street.

Notes:

a) Maximum concentration units for ozone, carbon monoxide, nitrogen dioxide, and sulfur oxides are in parts per million (ppm).
The concentration unit for suspended particulates (PM_{10}) is micrograms per cubic meter ($\mu g/m^3$).

b) For annual standards, a value of 1 indicates the standard has been exceeded.

c) California standard for ozone was 0.10 ppm for the year of 1988. The standard was changed to 0.09 ppm in 1989.

d) In July 1987, the federal standards for TSP were replaced by standards for fine particulate matter less than 10 microns in diameter (PM_{10}).

e) The California standard for SO_X changed from 0.05 ppm to 0.04 ppm on 1/1/93.

f) None = no standard in place.

g) NR = not reported.

Ozone is a powerful irritant that, in high concentrations, attacks the respiratory system, leading to the damage of lung tissue. Inhaled PM_{10}, NO_2, and SO_2 can directly irritate the respiratory tract, constrict airways and interfere with the mucous lining of the airways. When absorbed into the bloodstream, CO can endanger the hemoglobin (the oxygen-carrying protein in blood) and thus reduce the amount of oxygen that reaches the heart, brain, and other body tissues.

Federal and state ambient air quality criteria are "health-based" standards, i.e., the standards specify levels that regulatory agencies believe will not cause significant adverse health effects in sensitive populations. If ambient air quality is at or near the levels established by the standards, the aforementioned health effects should not occur.

Sensitive Receptors

Sensitive receptor locations are defined as sites at which people who are particularly sensitive or susceptible to adverse health effects associated with air pollution are present. Sensitive receptor populations typically include children, the elderly, and the acutely ill, especially those with cardio-respiratory diseases. These receptor populations can be linked to specific land uses:

Children	schools, playgrounds, childcare centers, residences
Elderly	retirement homes, convalescent homes, residences
Acutely Ill	hospitals, clinics

EXISTING RESOURCE REGULATORY FRAMEWORK

Local Resource Protection Regulations

Following are the significant local, state, federal and independent district governmental agencies and regulations related to natural resource preservation activities. Also discussed are funding and tax incentive programs.

City of Napa

Marsh and Wetland Habitat Regulations - As a requirement in the current Zoning Ordinance, any project in a marsh or wetland area, a restoration/management plan requiring City review and approval must be prepared by a landscape architect in consultation with the Department of Fish and Game and/or the Corps. The plan must address the ways that the site design will minimize the disturbance or loss of marsh and wetland habitat including the feasibility of the following alternatives: (1) clustered site design; (2) density transfer; and (3) off-site mitigation.

Wildlife Habitat and Plant Communities Regulations - The current Zoning Ordinance requires that for any project with oak woodland and/or evergreen forest plant communities (with the specified zoning overlay), a revegetation plan requiring City review and approval must be prepared by a landscape architect and must achieve the following:

- Development must relate to the site topography and soils to minimize the potential for vegetation loss and site disturbance;
- Vegetation removal is limited to that necessary for the development of the site and tree crowns and root zones must be protected for all trees to be retained.

- Site indigenous vegetation must be restored where removed or degraded by construction activities and temporary vegetation, to stabilize the soil, can be required on all disturbed areas to prevent soil erosion. New planting must be given sufficient water, fertilizer and protection to insure re-establishment.

Riparian Habitat Regulations - The current Zoning regulations require that a riparian habitat management plan be prepared for any development within the fifty-foot wide riparian buffer contiguous to portions of the Napa River, Napa Creek, Redwood Creek, Browns Valley Creek, Milliken Creek, Sarco Creek, and Tulocay Creek (applicable to parcels with specified overlay zone). The plan requires City review and approval, and must be prepared by a registered civil engineer or landscape architect in consultation with the Department of Fish and Game and/or the Corps:

- Development must relate to the site's topography and soils to minimize the potential for vegetation loss and site disturbance.

- Vegetation removal is limited to that necessary for the development of the site and tree crowns and root zones must be protected for all trees to be retained.

- Site indigenous vegetation must be restored where removed or degraded by construction activities and temporary vegetation, to stabilize the soil, can be required on all disturbed areas to prevent soil erosion. New planting must be given sufficient water, fertilizer and protection to insure re-establishment.

- The City may require bank stabilization to prevent erosion.

Napa County

Napa County Agricultural Commissioner - As an agent of the California Department of Food and Agriculture (CDFA), the Commissioner is responsible for regulating pesticides at the local level and educating/advising the local agricultural community about their proper use. The Commissioner registers pesticide applicators and advisers, and certifies private applicators under the CDFA Groundwater Protection Program.

Certain materials are designated as "restricted" because of their hazard to public health, domestic animals and the environment. The Commissioner issues restricted materials permits, and monitors the application sites to determine if environmental impacts have resulted and whether mitigation measures are needed. In cooperation with other agencies, the Commissioner also restricts pesticide use to protect wildlife.

Napa County Resources Conservation District - Resource Conservation Districts (RCDs) were formed nationwide in the 1930's in response to the Dust Bowl soil erosion crisis. Guided by a local governing board of district officials, RCDs receive state, federal and private sector funds to address soil, water, wildlife and other conservation issues.

The purpose of RCDs is to coordinate the activities of local, state and federal resource agencies within their area, and provide technical assistance to the local community so that landowners can determine how to best solve their conservation problems.

The Napa County RCD has initiated land stewardship which is a program allowing landowners to voluntarily determine how to best manage the resources within their local watershed. Issues addressed are soil erosion, pesticide use, water use, and wildlife habitat improvement.

Independent District

Mosquito Abatement District - In response to mosquitoes potential for spreading disease and their perception as a public nuisance, the California Health and Safety Code provides for the formation of Mosquito Abatement Districts responsible for limiting the spread of mosquitoes. These districts are empowered to control mosquitoes, flies, or other vectors, including the removal of standing water and other breeding areas. Because standing waters in wetland areas are potential breeding areas for mosquitoes, the Napa County Mosquito Abatement District needs to be consulted in managing or creating wetland areas.

Regional

Water Quality Control Board - The San Francisco Bay Regional Water Quality Control Board administers a water quality regulatory program to protect surface and ground waters in the San Francisco Bay drainage basin. The Board's authority is based on federal law (the Clean Water Act), and state authority (the Porter Cologne Water Quality Control Act); see additional discussion below.

State Regulations and Agencies

Endangered Species Act - Sensitive species have varying degrees of legal protection under the California Endangered Species Acts (CESA). Under the CESA, the California Department of Fish and Game reviews, comments and makes recommendations for any project that has the potential for adversely affecting a special status plant or animal.

Porter-Cologne Water Quality Control Act - This act is the major California law governing water quality. Its water quality goals, policies and implementation programs are comprehensive and include jurisdiction over groundwater as well as surface waters.

The Act is administered by the San Francisco Bay Regional Water Quality Control Board, which conducts the water quality planning, permitting and enforcement activities under State Board guidelines and oversight. The Act authorizes the Regional Board to prohibit or prescribe the discharge of any waste, whether point or nonpoint, to state waters (both ground and surface waters). The Regional Board may use its discretion to waive discharge requirements if the discharge is effectively controlled at the local level (such as septic system discharges, winery wastewater, etc.).

McAteer-Petris Act - The McAteer-Petris Act establishes guidelines for regulating filling, dredging, or other substantial changes in the use of water, land, or structures in and on the margins of San Francisco Bay. It also empowers the San Francisco Bay Conservation and Development Commission (BCDC) to grant or deny permits for these activities. The BCDC's jurisdiction includes: bay waters up to the area reached by highest tide; a band of shoreline that extends 100 feet inland; salt ponds; managed wetlands; and certain bay tributaries.

Permit approval is guided by the provisions of the McAteer-Petris Act and the San Francisco Bay Plan. Both the law and the plan significantly limit filling, dredging and development within the Bay or along its margins, and emphasize that, to the extent feasible, salt ponds and managed wetlands should not be converted to other uses.

Environmental Quality Act - CEQA provides for analysis of and public comment on the anticipated environmental consequences of development projects or changes in the nature or intensity of a land use. Identification of a potentially significant impact to an environmental resource, such as a wetland, through the CEQA process can be sufficient grounds for project denial. However, if a project is approved that is expected to have an important adverse effect on the environment, mitigation measures are required.

Water Resources Control Board - The State Water Resources Control Board has authority pursuant to the Porter-Cologne Act and the Clean Water Act to protect water quality and to issue water rights permits in the state. Also, the Board's Division of Water Rights has statewide jurisdiction for issuing water rights permits, oversees the nine Regional Water Quality Control Boards, including the San Francisco Bay Regional Water Quality Control Board, and handles appeals of all regional board decisions.

Division of Water Rights - The State Board's Division of Water Rights issues permits or licenses for all water allocations statewide. California water rights are of two types, riparian and appropriative.

Riparian rights usually come with owning a parcel of land adjacent to a source of water. Such a right entitles the landowner use of the water flowing past their property. Such rights require no permits, licenses or government approval, unless the rights holder wishes to store water from one season to the next.

Appropriative rights originated during the California gold rush, when a surface water was first transported far from the original source to work mining claims. The Water Commission Act of 1914 established a permit process for appropriative rights which is not administered by the Division of Water Rights. All use of water must be "reasonable and beneficial". Such uses commonly include municipal and industrial uses, irrigation, livestock watering, and more recently, recreational use, fish and wildlife protection, enhancement and aesthetic enjoyment.

This "reasonable use" provision also applies to ground water, but no permits are required for ground water pumping unless the water underflows a surface stream or flows in a subterranean stream with a known and definite channel. Ground water may be appropriated, although appropriator's rights are subordinate to those with overlying rights, and no permit process has been established in San Francisco Bay area counties.

In 1972, the California Department of Fish and Game (CDFG) protested numerous applications to appropriate water from various streams in the Napa River watershed. Their protests were based on the need for minimum flow in the Napa River between Calistoga and the City of Napa to support the River's fishery. CDFG was concerned that flows were substantially below the average from March 15 to May 15, because of diversions to provide water for frost protection and replenishing reservoirs.

Decision 1404, issued by the State Board on November 2, 1972, was the outcome of this protest. This Decision establishes minimum bypass flows (flows that must remain in the River after all diversions have been taken) for the Napa River and its tributaries during three periods from November 1 to May 31.

The Decision ensures the passage of adequate water to maintain fisheries (front season bypass flows are 10 cubic feet per second or the flow of the stream when less than 10 cubic feet per second). New bypass flows for the Napa River were recommended by CDFG in 1982, however the CDFG does not have adequate staff time to monitor whether the bypasses are being met on the Napa River.

Department of Water Resources - The California Department of Water Resources employs a Water Master to allocate water on the Napa River each year during the frost protection season (March 15 to May 15) when flows drop below a specified baseline. Landowners who need to divert from the River during this season must sign up for the program and install a water meter on their diversion pumps. The diversion allocations are enforced through meter readings. When flows drop below the baseline level, bypass flows for fisheries are also reduced.

Landowners are required to file a Riparian Statement of Water Diversion and Use (for a riparian claim) or an Appropriative Water Right Permit (for appropriative use) before constructing diversion works or diverting water. Applications are processed more timely if the landowner obtains clearance and approval from the Department of Fish and Game before applying, and the approval is attached to the application.

Lands Commission - The State Lands Commission (SLC) has authority to approve or deny development in tidal and submerged lands, and unfilled lands that were formerly tidal and filled. The SLC reviews project plans to

determine whether there is a state sovereign interest in the project site. If so, any development within the areas of the state's interest must be approved by the SLC.

Department of Fish and Game - Under Sections 1601-1603 of the California State Fish and Game Code, the California Department of Fish and Game (CDFG) has jurisdiction over the beds and banks of drainage channels. State regulations address any proposed activities which would divert or obstruct the natural flow or change the bed, channel, or bank of any stream.

In general, the CDFG requires a 100-foot buffer along either side of channels, but buffer areas and mitigation are subject to negotiation. Formal notification and approvals for these activities are made through a Streambed Alteration Agreement under Section 1603. The CDFG may impose reasonable conditions in the agreement which can be executed only after all other permits and certifications for a project have been obtained, and work cannot be initiated until the streambed agreement is executed.

The U.S. Fish and Wildlife Coordination Act, the California Environmental Quality Act (CEQA), and the State Subdivision Map Act all authorize the CDFG to advise local, state, and federal regulatory agencies on the state's viewpoint on fish and wildlife resources. The CDFG also carries out provisions of the California Fish and Game Code which, in particular, prohibits the discharge of "any substance of material deleterious to fish, plant life or bird life" to waters of the State.

The CDFG also reviews local, state and federal land use proposals including CEQA documents, as well as water rights applications. They are diligent regarding appropriative water rights applications on the Napa River and tributaries so that conditions that address adequate bypass flows, fish and wildlife mitigation measures for the place of water use, and soil erosion control are included in the water rights permit.

All projects which involve diverting or obstruction of the natural flow of a stream or change of its bed, channel, or bank must be reviewed and approved by the CDFG. A project will not receive a stream alteration permit if it adversely affects fish and wildlife. However, stream bed alteration projects are generally granted if the applicant agrees to satisfy the CDFG's concerns.

Streambed Alteration Agreements *(Section 1603 of the California Fish and Game Code)* - This law applies to activities in waterways, including riparian wetlands. It provides for the CDFG input to ensure that these activities are carried out in a manner that is not harmful to fish and wildlife resources.

The CDFG must be notified of plans that would use material from a streambed or substantially change the bed, channel, bank, or natural flow of any river, stream, or lake. If fish and wildlife resources would be adversely affected by the activity as proposed, the CDFG will recommend modifications to provide for the protection of those resources. Upon the consent of both parties, an agreement is entered into that specifies the wildlife protection measures to be taken during implementation of the project. This formalized agreement is required before project construction.

Although the CDFG may make its assent contingent on the completion of project modifications or additions, it may not refuse to enter into an agreement. The law provides for binding arbitration if parties are unable to resolve differences.

Federal Regulations and Agencies

Section 404 of the Clean Water Act - Section 404 of the Clean Water Act (CWA) is the centerpiece of the federal water pollution control program administered by the Environmental Protection Agency (EPA). The CWA divides pollution sources into two types, point and nonpoint. Its main thrust is on controlling point source discharges, but urban runoff (formerly considered a nonpoint source) is increasingly being treated as a point source

of pollution. Under the CWA, point source discharge of pollutants to the nation's navigable waters is prohibited unless a National Pollutant Discharge Elimination System permit is obtained. State and Regional Boards implement this program with oversight from the EPA.

The CWA also requires states to include control strategies for nonpoint pollution in their regional management plans (e.g., the San Francisco Bay Basin Water Quality Control Plan). To help achieve this, the San Francisco Bay Regional Water Quality Control Board has amended its Basin Plan to include an urban runoff management program that outlines: (1) requirements for baseline urban runoff control programs for application to cities and counties in the region; and (2) comprehensive control programs for application only to cities and counties that are more intensively developed.

Presently, Napa County and its cities need to prepare a baseline program only, but may be considered for a comprehensive program in the future. New stormwater runoff control programs for highways, industrial activity, and construction activities (including agriculture) must be complied with by all municipalities.

Endangered Species Act - The Endangered Species Act of 1973, as amended, protects proposed, listed, threatened or endangered species. Formal consultation with the US Fish and Wildlife Service (USFWS) is required for all federal projects and other projects requiring federal permits (e.g., Army Corps of Engineers permits) that could adversely affect any proposed or listed species.

The lead agency of a proposed action that could adversely affect a listed species is required to prepare a Biological Assessment which is the initial step in a formal Section 7 consultation with the USFWS which then prepares a biological opinion. The biological opinion includes a determination on whether the federal action will jeopardize the continued existence of the species in question and if so, requires that adequate mitigation be developed.

Both federal and state Endangered Species Acts prohibit "taking" endangered or threatened animal species. "Endangered" and "threatened" have similar meanings in both laws, i.e., an endangered species is any species of plant, fish, or wildlife in danger of extinction throughout all or a significant portion of its range, while a threatened species is any species of plant, fish, or wildlife that is likely to become endangered within the foreseeable future without special protection or management efforts. The California definition of these terms is limited to species or subspecies native to California.

The definition of "taking" under both acts includes hunting, capturing, killing, or attempting these activities. The federal law further includes harassing or harming in its interpretation, in which "harm" includes modifying or degrading a species' habitat in a way that would significantly impair the area's breeding, feeding, or sheltering capacity and result in injury to the species. California's act sets forth as state policy that state agencies should not approve projects that would result in the destruction or adverse modification of habitat essential to the continued existence of endangered or threatened species.

The USFWS administers the federal Endangered Species Act for terrestrial habitats and inland waters, and the National Marine Fisheries Service administers it for coastal and marine habitats including those of anadromous fish (marine fish that migrate to fresh water for spawning). The California Department of Fish and Game administers the state endangered species law. A landowner must consult with these agencies before carrying out any activity in a wetland.

Army Corps of Engineers - The Corps regulates activities in waters of the United States under both the federal Rivers and Harbor Act and Section 404 of the Clean Water Act (CWA). Under Section 10 of the Rivers and Harbor Act, the Corps issues permits for any work in tidal wetlands and all unfilled areas behind dikes which were below historic mean high water. Under Section 404 of the CWA, the Corps issues permits for discharges of dredged or fill material into waters of the United States below the high tide line in tidal waters and below the ordinary high water mark in nontidal waters. Its jurisdiction includes wetlands adjacent to waters of the United States, and isolated wetlands which have interstate commerce connections. The Corps shares its CWA Section 404 authority with the Environmental Protection Agency.

The Corps also designs and implements flood control projects authorized by the Flood Control Act of 1965, such as the Napa River Flood Control Project.

Environmental Protection Agency - The U. S. Environmental Protection Agency (EPA) administers the Clean Water Act (CWA) and jointly implements CWA Section 404 with the U.S. Army Corps of Engineers (Corps). The EPA reviews Corps permit applications to determine compliance with 404 (b)(1) Guidelines and has final authority over permit issuance. The EPA can also make jurisdictional determinations and enforce Section 404 violations.

Under the EPA Guidelines, the Corps cannot issue a Section 404 permit unless: (1) the proposed filling is the least damaging practicable alternative (i.e., a feasible upland alternative is available); (2) federally-listed rare or endangered species would not be jeopardized; (3) all state water quality standards are complied with; (4) the project will not significantly degrade the aquatic environment and; (5) adequate mitigation for unavoidable impacts has been provided.

The EPA also regulates pesticides through the Federal Insecticide, Fungicide, and Rodenticide Act by implementing the federal pesticide registration process and by classifying pesticides as restricted or nonrestricted for national use.

Fish and Wildlife Service - The U. S. Fish and Wildlife Service (FWS) administers the Endangered Species Act and influences decisions on fish and wildlife habitat through its role as a commenting agency on federal and state permit applications. The FWS must be consulted on federally permitted projects involving modification of any body of water in the U.S. as required by the Fish and Wildlife Coordination Act.

The FWS is currently preparing a recovery plan for the endangered California freshwater shrimp (Syncaris pacifica). Any damage to the shrimp from any source is considered a species taking under the Endangered Species Act. The FWS must be notified of any activity planned in stream channels which contain the shrimp, or in any areas that may directly affect those streams.

Department of Agriculture Soil Conservation Service - The U. S. Department of Agriculture Soil Conservation Service's (SCS) mission covers three major areas: (1) soil and water conservation; (2) natural resource surveys; and (3) community resource protection and management. The SCS provides both technical and financial assistance primarily on non-federal land to landowners and agencies.

The Napa SCS personnel help implement the new Napa County Conservation Ordinance by preparing erosion control plans and carrying out other functions. The Napa office also provides leadership and technical assistance to the Napa County Resource Conservation District in developing soil and water resource inventories in the land stewardship watersheds.

Because the SCS is not a regulatory agency, its role depends on the interest and cooperation of landowners. The Napa SCS can provide assistance for evaluating streambank, vineyard and grazing land erosion; assessing erosion and bank protection designs; conducting demonstration projects on grazing management practices; gully erosion control; and vineyard floor management techniques.

Multi-Jurisdictional Regulation

At the Federal level, four agencies are principally involved with wetland identification and delineation: (1) the Corps; (2) the Environmental Protection Agency (EPA); (3) the Fish and Wildlife Service (FWS); and (4) the Soil Conservation Service (SCS). Each of these agencies has developed techniques for identifying wetlands for various purposes.

The Corps and EPA are responsible for making jurisdictional determinations of wetlands regulated under Section 404 of the Clean Water Act. The Corps also makes jurisdictional determinations under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

Under Section 404, the Secretary of the Army, acting through the Chief of Engineers, is authorized to issue permits for the discharge of dredged or fill materials into the waters of the United States, including wetlands, with program oversight by EPA. The EPA has the authority to make final determinations on the extent of Clean Water Act jurisdiction. The Corps also issues permits for filling, dredging, and other construction in certain wetlands under Section 10.

The FWS definition of "wetland" includes, swamps, freshwater, brackish water, and saltwater marshes, bogs, vernal pools, periodically inundated saltflats, intertidal mudflats, wet meadows, wet pastures, springs and seeps, portions of lakes, ponds, rivers and streams, and all other areas which are periodically or permanently covered by water.

Under authority of the Fish and Wildlife Coordination Act, the FWS and the National Marine Fisheries Service review applications for these Federal permits and provide comments to the Corps on the environmental impacts of proposed work. In addition, the FWS's inventory of the Nation's wetlands will result in National Wetlands Inventory maps for the entire country. The SCS has been involved in wetland identification since 1956 and has recently become more deeply involved in wetland determinations through the "Swampbuster" provision of the Food Security Act of 1985.

Section 404 of the Federal Clean Water Act regulates discharge of fill into "waters of the United States," which includes *wetlands* and *tributary waters*. The Corps must issue a permit for any project which proposes the placement of fill material within jurisdictional waters or wetlands. The permit type depends on the total acreage of jurisdictional area to be filled. The EPA has an oversight role and can override a permit decision by the Corps.

Only as a last resort will the Corps and EPA accept creation of new wetlands or enhancement or restoration of existing wetlands as mitigation (Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines, 1990). Current federal policy is "no net loss" of wetland acreage.

Wetlands are defined by the Corps as:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

Because they are transition zones, wetlands do not lend themselves to accurate boundary delineations. However, the Corps has been required to develop a readily used boundary methodology pursuant to their Section 404 responsibilities, resulting in delineation manuals published in 1987, 1989, 1991. Presently, the Corps uses the 1987 Manual.

Under the 1987 Manual, a site must have wetland plants (hydrophytes), wetland (hydric) soils, and wetland hydrology indicators, all under the "normal circumstances" for the site to be defined as a wetland. This determination is as much concerned with the historic conditions of the site as it is a physical determination of the plant, soil, and hydrology data.

Generally, a wetland delineation begins by defining the boundaries of the plant associations of a site, often using an aerial photograph or topographic map. The delineator then samples the plants and soils at selected locations that will test the draft boundaries. For plants, the delineator must find that a preponderance of the species at the survey point are wetland species. The US Fish and Wildlife Service (FWS) publishes a list of wetland plants that is

generally relied upon for this determination. The delineator also typically digs a soil pit and reviews the condition of the soil 10 to 12 inches below the surface. The US Soil Conservation Service publishes lists of hydric soils, but soils are generally reviewed on the site as field conditions can vary from these maps.

Identifying the hydrology indicators is often the most difficult step. The 1987 Manual established criteria of as little as 18 days of saturation within the root zone as the primary hydrologic criteria defining wetlands. However, finding field evidence of this level of saturation is very difficult, especially during the dry season. Delineators may look for dry algal matting on the surface of "matted detritus", a thin layer of partially decomposed organic matter. One of the best means of defining site hydrology is to place shallow observation wells in strategic locations and review these over the wet portion of the growing period. While expensive, this step can definitively establish what portion of the site actually has wetland hydrology.

While completing these steps, the delineator also determines if any of these indicators have changed in the recent past and modified the normal circumstances. These findings are then recorded for each survey point on a standard data sheet and the map is submitted for the Client's review.

Tributary waters (also called "other waters") are channels or other waterways with identifiable beds and banks that drain to navigable waters. The Corps takes jurisdiction over that part of the channel below the ordinary high water mark, an ill-defined line roughly equivalent to the level of the mean annual storm event. In the Western US, this means that seemingly dry arroyos or gullies that may not be wetlands may be regulated by the Corps. These tributaries are also be mapped by delineators on jurisdictional maps.

Although not required for all applications (local environmental documents, for example), a delineator usually submits the jurisdictional map and data sheets with a summary report to the Corps for their review and approval. Generally, the Corps then schedules a site visit to review the delineation, followed by a formal confirmation letter to the delineator. Approved delineations are generally valid for three years, although the Corps can shorten this time period if they feel conditions have changed. These delineations can also be extended under certain circumstances.

The USFWS wetland definition includes, swamps, freshwater, brackish water, and saltwater marshes, bogs, vernal pools, periodically inundated saltflats, intertidal mudflats, wet meadows, wet pastures, springs and seeps, portions of lakes, ponds, rivers and streams, and all other areas which are periodically or permanently covered by water.

Funding and Tax Incentive Programs

Napa County Land Trust Conservation Easement Program - Dedicated easements are an effective way for landowners to preserve land for present and future generations. A conservation easement permanently limits use of the property, as agreed to by the Land Trust and the landowner. An owner may receive significant tax benefits upon donating an easement due to its reduced speculative value. Resource Conservation Districts also may accept conservation easements donations.

California Clean Water Act 604(b) Funds - The 604(b) State Revolving Loan Funding was established initially as a funding source to replace Title 2. construction grants for wastewater treatment facilities. A portion of 604(b) funding is dedicated to resolving non-point source problems. The State Water Quality Control Board has determined that up to $40 million annually will be available for any project related to non-point source pollution reduction. funded projects include municipal stormwater management plans designed to achieve new permitting requirements (including wetlands systems to reduce stormwater pollution), irrigation district projects to conserve water, and improvements to septic system management.

Any California municipality is eligible to receive funding, but individuals also may apply for funding for innovative demonstration projects. The interest rate for these loans is half the rate of a State General Obligation

Bond (approximately 3.2 - 3.5 %). The San Francisco Bay Regional Water Quality Control Board accepts loan project proposals which are then submitted to the State Board for prioritization and final approval.

California Coastal Conservancy - The Coastal Conservancy was created to help preserve, restore, and enhance California's coastal resources and to develop creative solutions to difficult land use problems on the coast and San Francisco Bay.

The Conservancy is authorized to acquire land, to restore coastal waterfronts, restore wetlands and enhance watersheds. The Conservancy funds watershed-related projects under various programs including agriculture preservation, coastal resource enhancement, and urban waterfront improvement. Grants are provided to local jurisdictions and qualified non-profit groups. The Conservancy has funded projects in the City including the Kennedy Park wetlands restoration project and the Napa Urban Waterfront Restoration.

California Department of Water Resources Urban Streams Restoration Program - The California Department of Water Resources grants funds (the maximum is $200,000) for local stream restoration projects. The program's aim is to prevent property damage by floods and bank erosion and to restore the natural value of streams. Public agency applicants must be co-sponsored by a private utility or a private citizens group and private citizen group applicants must be co-sponsored by a local public agency. Grants can fund projects as simple as organizing volunteers to monitor streams or as complex as completely restoring a stream to its natural state.

California Department of Fish and Game Fishery Restoration Program - Under various CDFG programs (e.g., the California Wildlife, Coastal and Park Land Conservation Bond act of 1988, the Cigarette and Tobacco Tax Benefit Fund, the Salmon Stamp Program and the 1984 Fish and Wildlife Enhancement Bond Act), funds are available for a variety of fish, wildlife and habitat/waterway restoration projects for species such salmon, steelhead, and wild trout. The total funds available for these projects exceeded $4.5 million in 1989. Some funds are available to individuals and some only to public agencies.

California Department of Forestry and Fire Protection Tree Planting Program - The California Department of Forestry and Fire Protection accepts applications from state and local agencies for tree planting funds through a program sponsored by the U. S. Small Business Administration. Trees can be planted on state or local government-owned land but must be purchased from and planted by small businesses. Cost-sharing for this program is 50%.

End of Chapter 7

CHAPTER 8
HEALTH AND SAFETY

INTRODUCTION

A diversity of environmental hazards need to be addressed in planning for urban development. Some of these hazards are natural, some are a result of human activity and others are natural hazards activated or exacerbated by development activity. Some hazards can be avoided by exercising diligence in the development review process through careful land use location decision. Other hazards can be tolerated or minimized by adoption of appropriate land use regulations and development guidelines. The Health and Safety background chapter provides base information on potential health and safety hazards that could affect the City of Napa and includes discussion of seismic and geologic hazards, flood hazards, wildland and urban fire hazards, aircraft crash risks, hazardous materials, emergency response and the affects of noise exposure.

SEISMIC HAZARDS

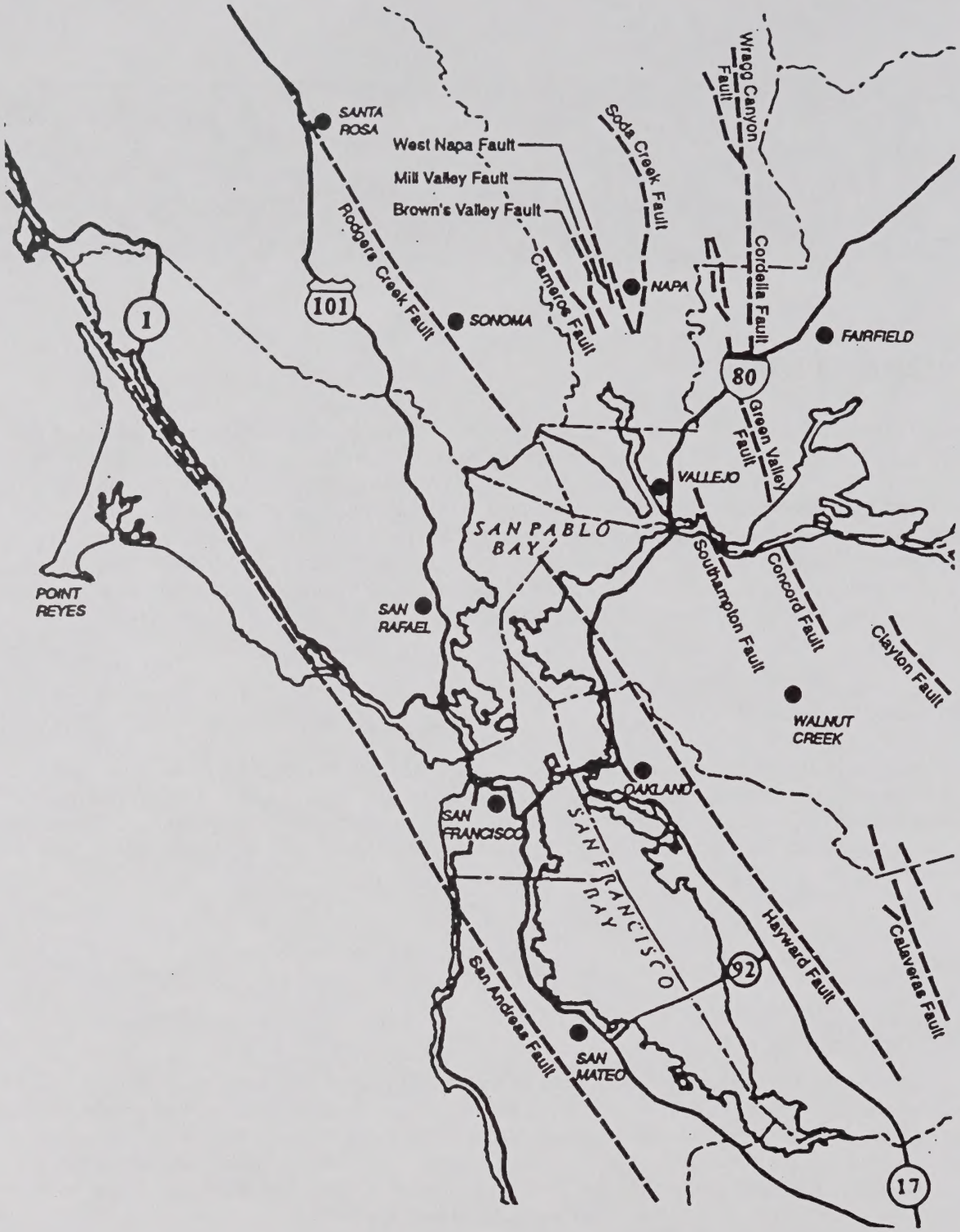
California, and particularly the San Francisco Bay Area, is a seismically active area. Many faults have been located and mapped by geologists, based on the observation of geologic discontinuities (different rock types on either side of the fault) and surface expression (many faults cause depressions in surface topography). This section provides information on the seismicity, geology/topography, non-seismic hazards and slopes, and soils of Napa and the surrounding region.

Faults

Regional Faults

The Coast Ranges, which traverse northern California in a northwest to southwest direction, are characterized by numerous active faults. The active regional fault zones that have the potential to affect the Napa area include the San Andreas, the Hayward, the Calaveras, and the Rodgers Creek faults. A fault zone is an area of crustal weakness characterized by a series of faults across which there has been relative displacement of the two sides parallel to the zone. An active fault is one that has shown movement during the last 10,000 years, based on documented, geologic evidence. Figure HS-1 illustrates regional fault zones in the Napa area.

San Andreas Fault Zone
This fault zone is located approximately 33 miles southeast of Napa. The maximum credible earthquake (MCE) capable of being generated along this system, which was responsible for the 1989 Loma Prieta earthquake (Richter magnitude 7.1), is 8.3 on the Richter scale which translates to a XI on the Modified Mercalli Intensity Scale. The MCE is defined as the largest earthquake that appears reasonable capable of occurring under the presently known geological framework (CDMG 1975). The United States Geological Survey (USGS) has estimated a relatively low probability of 2 percent that an earthquake of Richter magnitude 8.0 would occur along the North Coast segment (USGS 1990).



City of Napa General Plan | Fault.DS4 | 12/98

Figure - HS 1

Regional Fault Zones

North

Not to Scale

Source: City of Napa Planning Department

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Hayward Fault Zone
This fault zone is located approximately 21 miles southeast of Napa. According to the Working Group on California Earthquake Probabilities, as cited by the California Division of Mines and Geology (CDMG) (1990), this fault has a 25 percent chance of producing an earthquake of magnitude 7.0 (which translates to a IX–X on the Modified Mercalli Intensity Scale) or greater within the next 30 years.

Calaveras Fault Zone
This fault zone is located approximately 18 miles southeast of Napa. The northern segment of this fault from the Calaveras Reservoir to Danville has an estimated 200-year recurrence time. At least 160 years have passed since the last earthquake of Richter magnitude 7.0 (Applied Technology Council 1994). The southern segment of the fault between the Calaveras Reservoir and Hollister was responsible for the 1984 Morgan Hill magnitude 6.2 earthquake.

Regional and Local Fault Zones in the Napa Vicinity

Healdsburg-Rodgers Creek Fault Zone
This fault zone lies 12 miles to the west of Napa and is part of the San Andreas fault system; it may also be the northward continuation of the Hayward fault. Trenching studies across the fault by the USGS have resulted in an estimated 250-year recurrence interval for magnitude 7.0 earthquakes (Budding et al 1989, as cited by CDMG 1991). The last major earthquake along this fault was in 1808, and the USGS considers this fault a prime potential for future large earthquakes (CDMG 1991). ABAG estimates a 22 percent chance of a 7.0 magnitude earthquake on this fault in the next 25 years (ABAG 1992).

Local Faults

There are three active faults within Napa County; from east to west these faults are the Cordelia, the Green Valley, and the West Napa faults Figure HS-1. It is estimated that these faults are capable of producing earthquakes with a Richter magnitude of up to 6.75 which translates to a VIII–IX on the Modified Mercalli Intensity Scale (County of Napa 1992). A fourth local fault, the Soda Creek fault, lies east of the West Napa fault and is considered potentially active with a predicted maximum Richter magnitude of 6.25 (Wills 1994). This fault displays evidence of displacement during the late Quaternary period (7000,000 to 10,000 years ago) but has not been active during the Holocene period (10,000 years ago to present) (Bryant 1982). Other less significant faults in the Napa area include the Carneros, Mill Valley, and Browns Valley faults.

Special Studies Zones

California Division of Mines and Geology (CDMG) classifies faults as either active or potentially active according to the Alquist-Priolo Special Studies Zone Act of 1972 (CDMG 1972). A fault that has exhibited surface displacement (movement) within the Holocene Epoch (the last 10,000 years) is defined as active by the CDMG. The CDMG suggests that this definition be used to evaluate faults located within a 60-mile radius of a project site. A fault that has exhibited surface displacement during the Pleistocene Epoch (1.6 million years ago to 10,000 years ago) is defined as potentially active.

The State of California enacted the Alquist-Priolo Special Studies Zone Act in 1972 to assure that homes, offices, hospitals, public buildings, and other structures for human occupancy are not built on active faults, thereby preventing or avoiding potential damage resulting from fault surface rupture. Surface rupture is a break in the ground surface and associated deformation resulting from fault movement. The act requires a geological

investigation before a local government can approve most development projects in special studies zones. In the Napa County area, Alquist-Priolo Special Studies Zones have been established for the Rodgers Creek, the southern portion of the West Napa and the Green Valley faults. The portion of the West Napa fault that is within the City of Napa is not included in the Alquist-Priolo Special Studies Zone.

Groundshaking

The strength of an earthquake is commonly defined in terms of the Richter scale. The strength, or magnitude, of the earthquake is a function of the total energy released by an earthquake. The Richter scale is related to the logarithm of an observed displacement on a calibrated instrument and its distance from the epicenter. As the Richter scale is logarithmic, an increase of one number in magnitude is the same as a 32 times increase in energy. A magnitude 7 earthquake releases 32 times more energy than a magnitude 6 earthquake.

The Modified Mercalli Intensity Scale of 1934 (Table HS-1) was developed to provide a better understanding of the physical effects of varying magnitudes of the Richter scale. The scale is divided into 12 levels of intensity and is generally subjective, based on personal observations of people who felt the earthquake. I on the scale is a barely perceptible effect, whereas XII suggests catastrophic damage.

One of the primary causes of earthquake damage is the groundshaking that occurs following rupture of the earth's crust. Maps predicting the severity of earthquake groundshaking usually depict intensity. The severity of groundshaking and its effects on structures depends on several factors: the size of the earthquake or magnitude, distance to the earthquake fault, geologic materials underlying the site, relationship between the period of ground vibrations and the period of vibration of the structure, the design of the structure, and the duration of groundshaking. Larger magnitude earthquakes generally cause the ground to shake harder and longer, and they affect larger areas. Figure HS-2 generally illustrates the risk level related to the degree of groundshaking expected in Napa.

Structures underlain by bedrock experience less shaking than structures on alluvium or Bay Mud, which are softer materials. Thick, soft, or loose soils such as Bay Mud tend to amplify and prolong the shaking. Alluvium is the predominant material underlying Napa, making much of the City susceptible to groundshaking.

Ground Failure (liquefaction, subsidence)

Liquefaction

A secondary effect of groundshaking is liquefaction. Liquefaction is defined as the transformation from a solid to a liquid state as a result of increased pore pressure and reduced effective stress due to earthquake vibration.

Figure HS-3 shows the location of areas with alluvial deposits that are most susceptible to liquefaction. Generally, liquefaction requires loose, unconsolidated silts or fine sands at or near the groundwater table. Liquefaction susceptibility is primarily a function of age, density, depth of sediment, and depth to groundwater. Liquefaction susceptibility decreases as the depth to groundwater increases because the normal effective stress acting on saturated sediment is greater (USGS 1985). The poorly consolidated younger alluvium that occupies areas south of the City and along the Napa River roughly correspond to the historic marshland and consists of Holocene Alluvium (HA) and Bay Muds (Qbm) that may be subject to liquefaction or subsidence. Younger soils found on the Valley floor in the western portion of the City are also subject to potential liquefaction. Site investigations and testing would have to be conducted to determine the potential for these hazards.

Table HS-1 Modified Mercalli Intensity Scale	
I.	Not felt. Marginal and long-period effects of large earthquakes. (RM-2)
II.	Felt by persons at rest, on upper floors or favorably placed. (RM-2)
III.	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimate. May not be recognized as an earthquake. (RM-3)
IV.	Hanging objects swing. Vibration like passing of heavy trucks. Duration estimate. May not be recognized as an earthquake. (RM-3)
V.	Felt outdoors; direction estimated. Sleepers wakened. Liquid disturbed, some spilled. Some unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move, Pendulum clocks stop, start, change rate. (RM-4)
VI.	Felt by all. May frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and Masonry D cracked. Small bells ring (church, school). Trees, bushes shaken visibly, or heard to rustle. (RM-5)
VII.	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to Masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices, also unbraced parapets and architectural ornaments. Some cracks in Masonry C. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged. (RM-5)
VIII.	Steering of motor cars affected. Damage to Masonry C; partial collapse. Some damage to Masonry B; none to Masonry A. Fall or stucco and masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells, Cracks in wet ground and steep slopes. (RM-6)
IX.	General panic. Masonry D destroyed; Masonry C heavily damaged, sometimes with complete collapse; Masonry B seriously damaged. General damage to foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas, sand and mud ejected, earthquake fountains, sand craters. (RM-7)
X.	Most Masonry and frame structures destroyed in their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly. (RM-7)
XI.	Rails bent greatly. Underground pipes completely out of service. (RM-8+)
XII.	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air. (RM-8+)

1. Masonry A, B, C, D. To avoid ambiguity of language, the quality of masonry, brick or otherwise is specified by the following lettering:

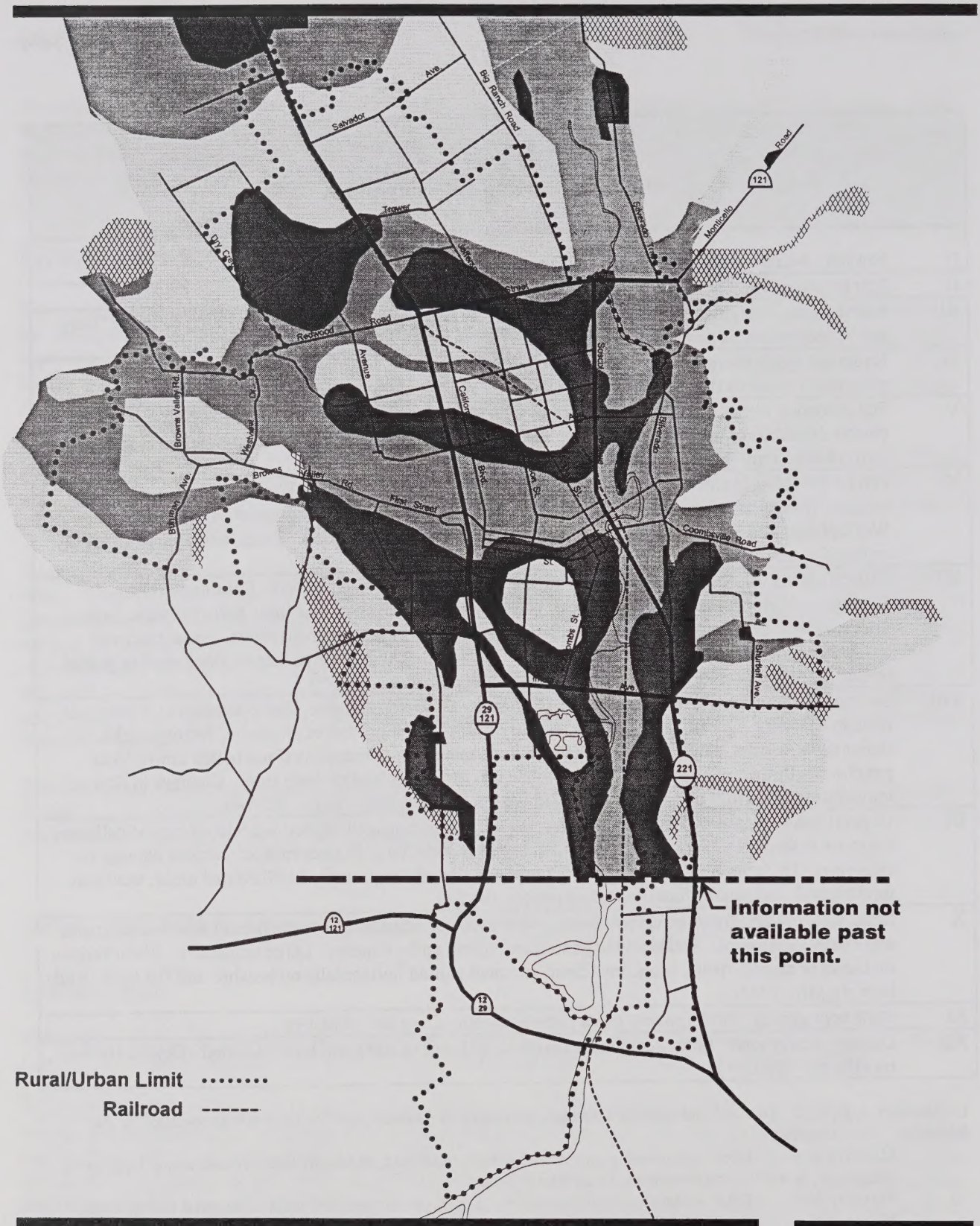
Masonry A: Good workmanship, mortar and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces.

Masonry B: Good workmanship and mortar, reinforced, but not designed in detail to resist lateral forces.

Masonry C: Ordinary workmanship and mortar, no extreme weaknesses like failing to tie in at corners, but neither reinforced or designed against horizontal forces.

Masonry D: Weak materials, such as adobe; poor mortar, low standards of workmanship; weak horizontally.

2. RM refers to Richter Magnitude at earthquake epicenter. Felt intensities generally decrease with increasing distance from the epicenter.



City of Napa General Plan | Groundsk.DS4 | 12/98

Figure - HS 2

Risk Related to Goundshaking

North

725' 1/2 Mile 1 Mile 3 Miles

0

Very High
High
Moderately High
Moderate
Moderately Low

Source: ABAG

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Seiche

A seiche is the oscillation of a landlocked body of water, often caused by seismic activity, that can result in flooding of adjacent or downstream areas. Napa Valley faces a unique hazard of seiches in the local wineries. Large casks and storage tanks throughout the valley together hold thousands of gallons of wine. If this large volume of liquid were spilled at once due to oscillation, downstream areas may be threatened. "Wine seiches" have occurred in the past, and with the increased amount of wine production, the potential hazard increases.

Tsunami

This earthquake phenomenon is caused by ocean-centered earthquakes that form long waves. The "tidal" action wave causes high water runup when it reaches land. Because the City of Napa lies beyond the San Pablo Bay margin, the city is not subject to this hazard.

GEOLOGIC HAZARDS

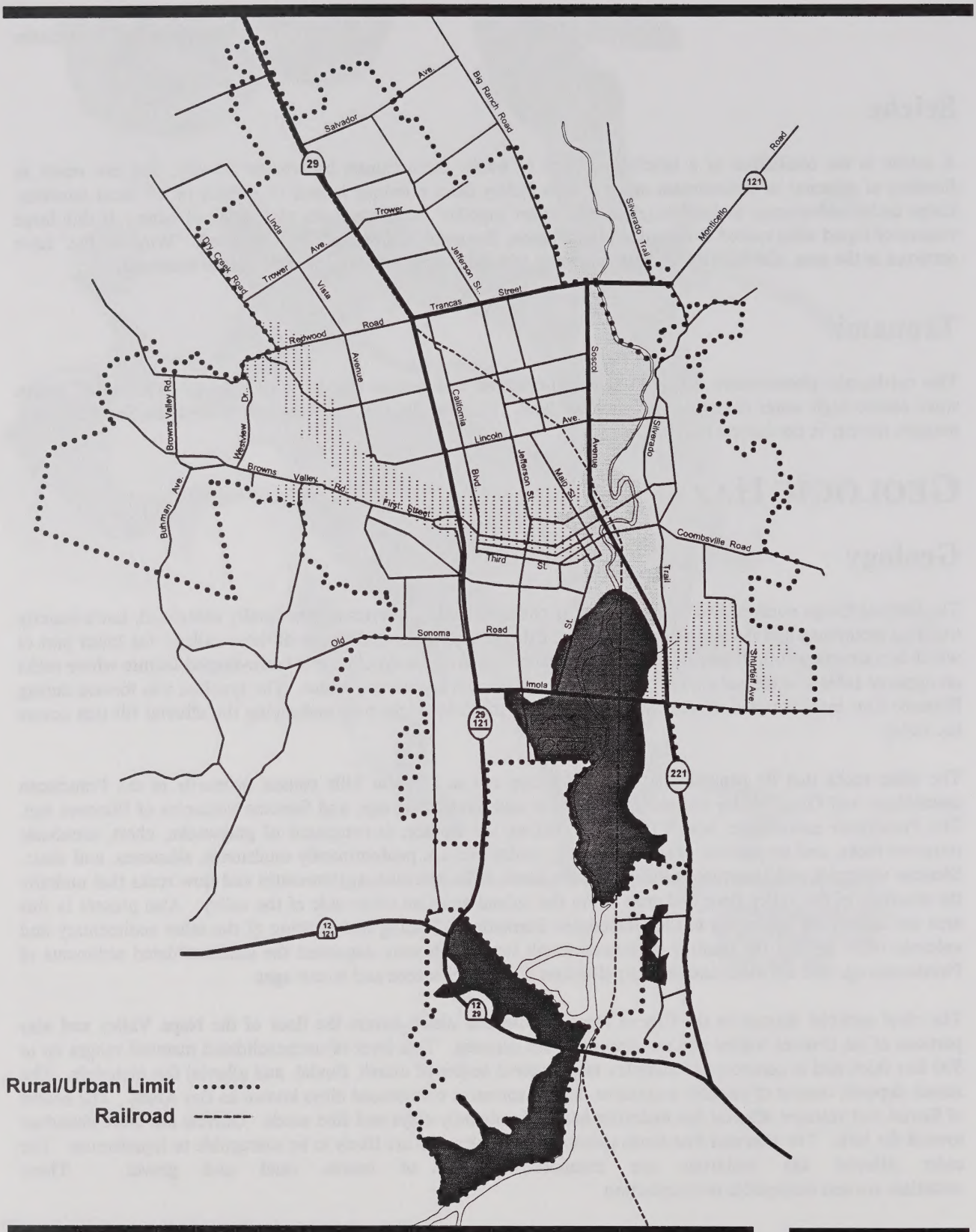
Geology

The Coastal Range north of San Francisco Bay is characterized by a series of structurally controlled, northwesterly trending mountains and intervening valleys. The City of Napa is located in one of those valleys, the lower part of which is a structural trough known as the Napa Valley syncline. A syncline is a basin-shaped feature where rocks on opposite sides of a central axis are inclined downward and toward the center. The syncline was formed during Pliocene time by downward movement and faulting of the older rocks now underlying the alluvial fill that covers the valley.

The older rocks that lie beneath the valley and crop out in adjacent hills consist primarily of the Franciscan assemblage and Great Valley sediments of Jurassic and Cretaceous age, and Sonoma volcanics of Pliocene age. The Franciscan assemblage, which is not exposed on the surface, is composed of graywacke, chert, ultrabasic intrusive rocks, and serpentine. The Great Valley sediments are predominantly mudstones, siltstones, and shale. Sonoma volcanics and Holocene features are lava flows, tuffs, breccias, agglomerates and flow rocks that underlie the alluvium of the valley floor and crop out in the upland areas on either side of the valley. Also present in this area are sandstones belonging to the Domengine Formation. Folding and faulting of the other sedimentary and volcanic rocks formed the shallow structural trough into which were deposited the unconsolidated sediments of Pleistocene age and the older and younger alluvium of late Pleistocene and recent ages.

The chief surficial deposit in the City of Napa is alluvium which covers the floor of the Napa Valley and also portions of the Browns Valley and numerous smaller canyons. This layer of unconsolidated material ranges up to 500 feet thick and is composed of complex interfingered bodies of marsh, fluvial, and alluvial fan materials. The marsh deposits consist of possibly expansive, highly corrosive compressed clays known as Bay Muds. The bodies of fluvial and younger alluvial fan materials are predominantly clays and fine sands. Gravels are more abundant toward the hills. The silts and fine sands present in these deposits are likely to be susceptible to liquefaction. The older alluvial fan materials are composed chiefly of coarse sand and gravel. These materials are less susceptible to liquefaction.

The Generalized Geology Map (Figure HS-4) shows the types and distribution of geologic materials in the City's planning area and immediate environs. Geologic materials that are not susceptible to slope failure because of their relative flatness include bay mud, fluvial deposits, alluvium, alluvial fans, terrace deposits, volcanics and sedimentary deposits. However, volcanic surface materials may be prone to landslides and terrace deposits with gentle to moderately steep slops (as in the north part of Alston Park) are susceptible to surface slumps. Geologic materials that are very susceptible to slope failure include sandstones, shales and mudstones.



City of Napa General Plan — Liquefac.DS4 — 12/98

Figure - HS 3

Liquefaction Susceptibility Areas

North

725' 1/2 Mile 1 Mile 3 Miles

0

Very High

High

Moderate

Source: City of Napa Planning Department

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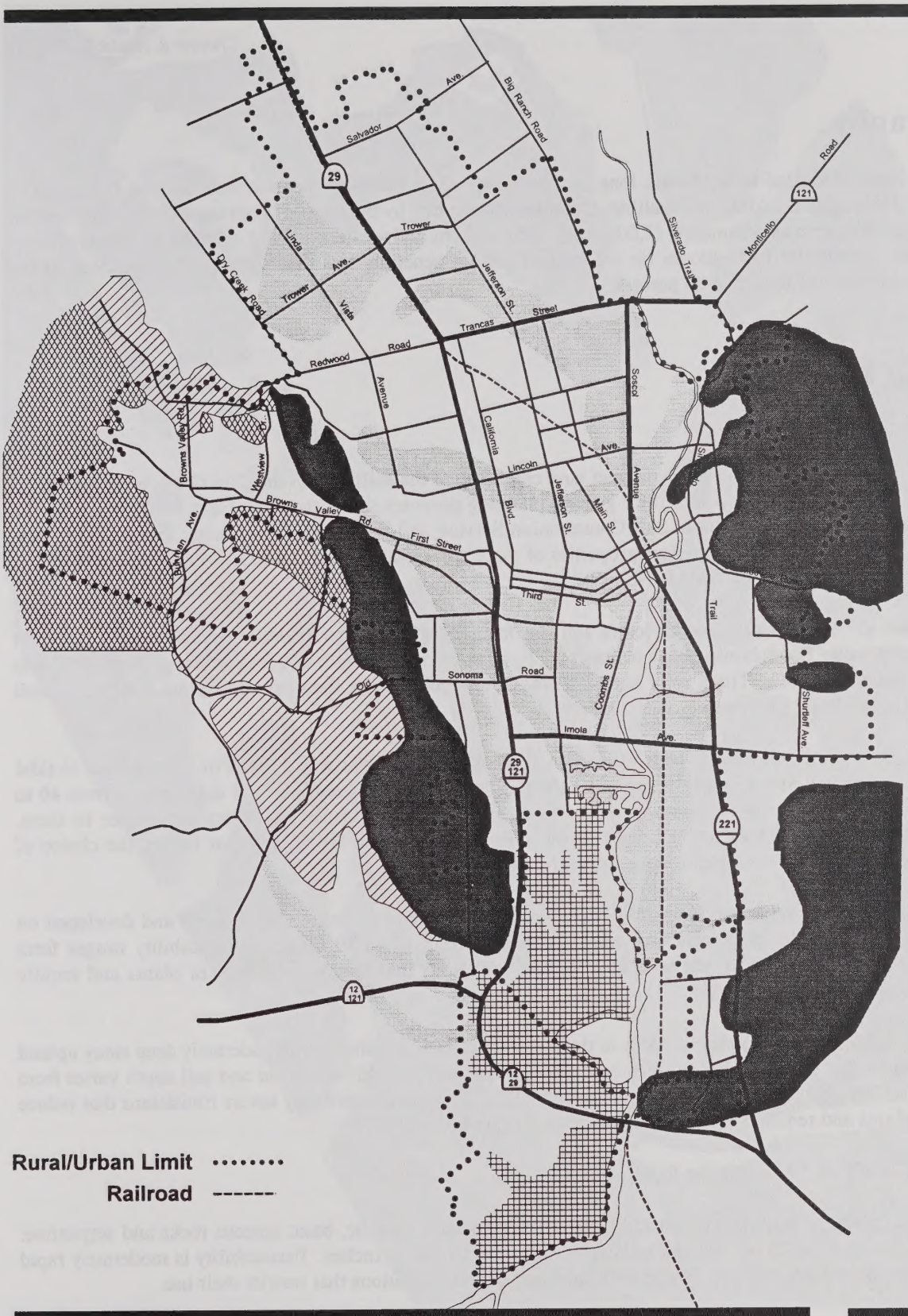

City of Napa General Plan | Geology.DS4 | 12/98

Figure - HS 4

Generalized Geology

North

725' 1/2 Mile 1 Mile 3 Miles

0

Bay Mud
Fluvial
Alluvial
Volcanics
Sandstone & Shale
Mudstone

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Topography

The City of Napa is located in a 35-mile long, northwest trending valley of the Northern Coastal Range. The valley, formed by regional folding and faulting, is flanked on the east by the Howell Mountains (1,500 feet) and on the west by the Mayacamas Mountains (2,000 feet). The eastern and western upland portions of this area have elevations that exceed 600 feet. Slopes on the valley floor are generally less than 5 percent while those in the uplands commonly range from 5 to 30 percent.

Soils and Erosion

Soils

Soil classifications which combine soil types and land capability of the soils within the City of Napa are shown on Figure HS-5. The soil capability is meant for general planning purposes rather than as a basis for decisions on the use of specific sites. The United States Soil Conservation Service Soil Survey of Napa County (Survey) would be used for detailed engineering and physical properties of these soil classifications. The five types of soil found in the City of Napa are described in Table HS-2.

Class I soils are somewhat poorly drained loams and clay loams, slightly acid, very deep, nearly level and found on alluvial fans and valley floodplains. Slope is less than 2 percent, and soil depth is 6 feet or more. Permeability is moderate to moderately slow. These soils have few limitations that restrict their use. They are fertile and well suited to most agricultural purposes.

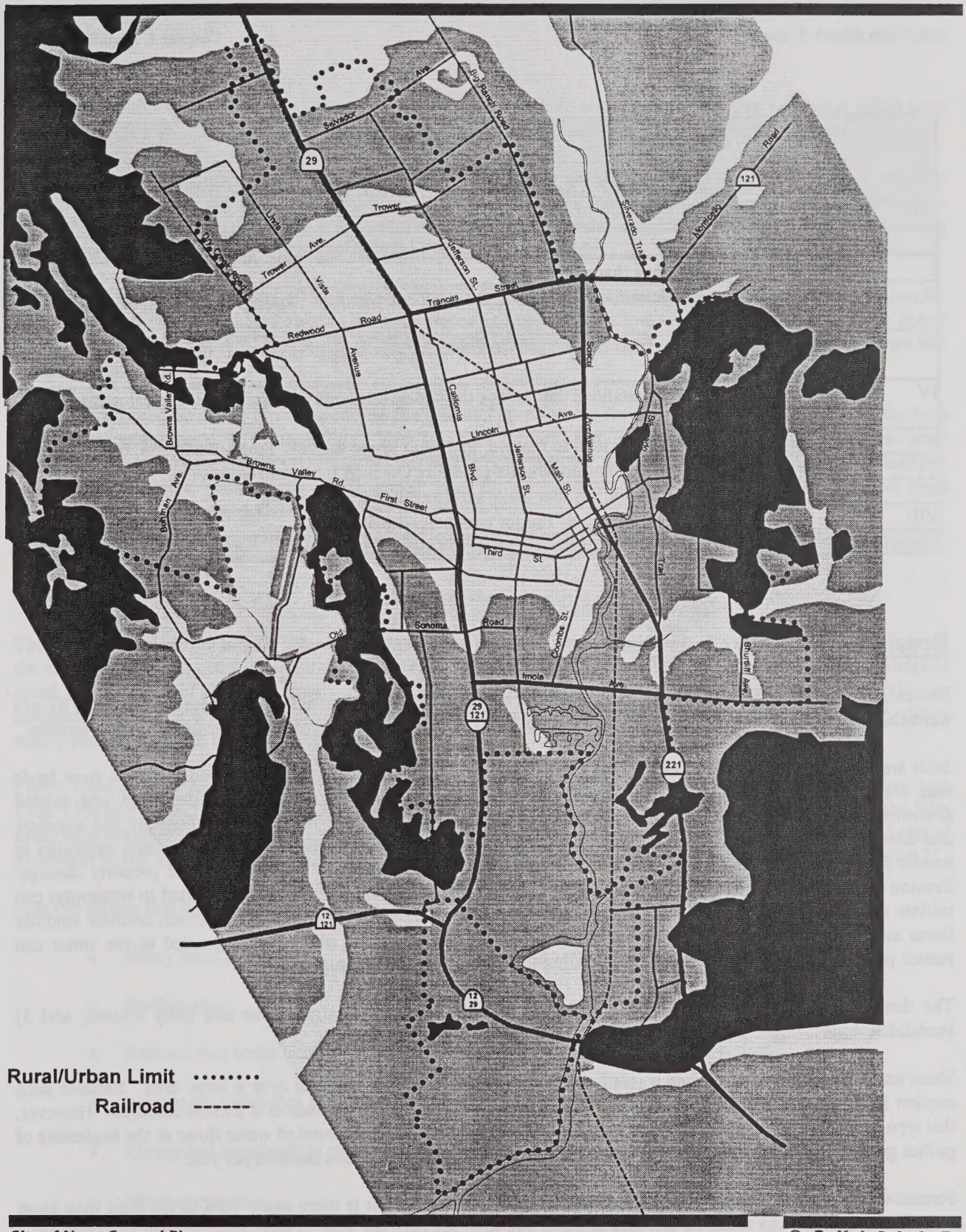
Class II soils are organic and mineral soils formed on alluvial fans and terraces and occur in areas subject to tidal action. The are poorly drained, strongly acid and saline. Slope is 2 to 9 percent and soil depth varies from 40 to 80 inches. permeability varies moderate to moderately slow to slow. Because of the organic matter in them, subsidence may occur when they are drained. These soils have moderate limitations that reduce the choice of plants and require moderate conservation practices for development activity.

Class III soils are moderately deep to shallow loamy surfaces underlain by dense clay subsoils and developed on old terraces. Slope is 2 to 15 percent and soil depth varies from 15 to 80 inches. Permeability ranges form moderately rapid to very slow. These soils have severe limitations that reduce the choice of plants and require special conservation practices, or both.

Class IV soils are derived from volcanic rocks in the upland areas and are shallow to moderately deep stony upland soils, underlain by clay pans or other dense subsoils. Slope ranges from 5 to 30 percent and soil depth varies from 20 to 80 inches. Permeability ranges from rapid to very slow. These soils have very severe limitations that reduce the choice of plants and require very careful management or both.

There are no **Class V or VI** soils in the RUL.

Class VII soils formed in materials weathered from shale, sandstone, rhyolite, basic igneous rocks and serpentine. Slope ranges from thirty to 75 percent and soil depth varies from 12 to 40 inches. Permeability is moderately rapid to slow. Erosion hazard is very high. These soils have very severe limitations that restrict their use.



Rural/Urban Limit ••••••••

Railroad ------

City of Napa General Plan | Soilcap.DS4 | 12/98

Figure - HS 5

Soils Capability

North

725' 1/2 Mile 1 Mile 3 Miles

0

Soils-

Class I & II:

Class III & IV:

Class V - VIII:

Source: City of Napa Planning Department

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Table HS-2 Land Capability Classification System	
Class	**Use Limitations**
I	Few limitations that restrict use.
II	Moderate limitations that reduce the choice of plants or require moderate conservation practices.
III	Severe limitations that reduce the choice of plants, require careful conservation practices, or both.
IV	Very severe limitations that reduce the choice of plants or require very careful management, or both.
V	Limitation, impractical to remove, that limit use to pasture, range, woodland, or wildlife.
VI	Sever limitations that make soils generally unsuited for conservation.
VII	Very severe limitations that make soils unsuited to cultivation.
VIII	Limitations that preclude use for commercial plants.
Source: U.S. Soil Conservation Service, 1993.	

Erosion

Soil erosion is a naturally occurring process that can be worsened by human activities. Because the Napa River's watershed is a natural relatively high producer of sediment, it is particularly sensitive to the effects of soil erosion.

Soils are generally susceptible to erosion on steep slopes particularly if vegetation is removed. Erosion from lands that drain into the River and its tributaries results in sedimentation from the topsoil deposited and carried downstream. Flowing waters with heavy sediment loads are likely to loose flood carrying capacity and overflow and damage adjacent areas. Sediment that collects in storm sewers reduces the storm sewer system's capability to handle flood waters. The ultimate costs of erosion can be high in terms of public safety and property damage. Erosion also has impacts on habitats and wildlife. Nutrients removed from topsoil and deposited in waterways can initiate algae blooms that deplete oxygen and kill fish. Excessive sediment deposits on stream bottoms smother fauna and can create a sterile environment. Stream turbidity caused by sediments suspended in the water can reduce photosynthesis in water-based flora leading to reduced habitat food supply.

The three main types of soil erosion are: 1) sheet and rill erosion; 2) streambank and gully erosion; and 3) landslides.

Sheet and rill erosion occurs when a relatively uniform layer of soil is removed over a large area. Because such erosion is not readily apparent, generally it is not perceived as a significant loss of a natural resource. However, this type of erosion can remove up to 10 tons per acre per year. Small concentrated water flows at the beginning of gullies generally become apparent only when the erosion rate exceeds 20 tons per acre per year.

Streambank and gully erosion is found in both rural and urban areas. It is more easily seen in the field than sheet and rill erosion and can result in soil loss of up to 300 tons per acre per year. Urban development activities are a significant contributor to this type of erosion which is sensitive to changes in watershed hydrology, rainfall infiltration rates, the amount of hard surfaces and surface flow diversions.

A 1985 streambank conditions inventory by the Napa County Resource Conservation District identified significant erosion along several stretches of streambank in the City's planning area. Erosion varied from moderate (bare

streambank with exposed tree roots) to severe (bare streambank bare with severe vegetative overhang, fallen trees and slumps). These eroded stretches have worsened due to several floods since the inventory was taken.

Landslides are found throughout the watershed on unstable slopes and are discussed in greater detail in the next section of this chapter. Landslides consist of rock, soil and/or debris that move downslope by sliding, flowing or falling. Movement ranges from very slow (earthflow) to very fast (debris flow). Landslides vary in size from large blocks of material and slumps to relatively small amounts of surface debris.

Debris flow is a particular kind of landslide that often receives extensive media coverage during rainy seasons. These flows are caused by heavy rainfall on steep slopes and begin as shallow landslides. Once in motion, debris flows move rapidly downhill, frequently gathering speed and more debris which often is deposited far from the point of origin.

The hazards posed by debris flows depend on the size and speed of the flow, and the slope and shape of the land surface over which the debris flow occurs. Very small debris flows may cause only slight damage whereas large flows can be quite damaging,(demolishing houses and burying people. Because of the potential damage resulting from such flows, the National Flood Insurance Program encompasses inundation by "mudslides" (the word commonly used to describe debris flows).

Steep Slopes

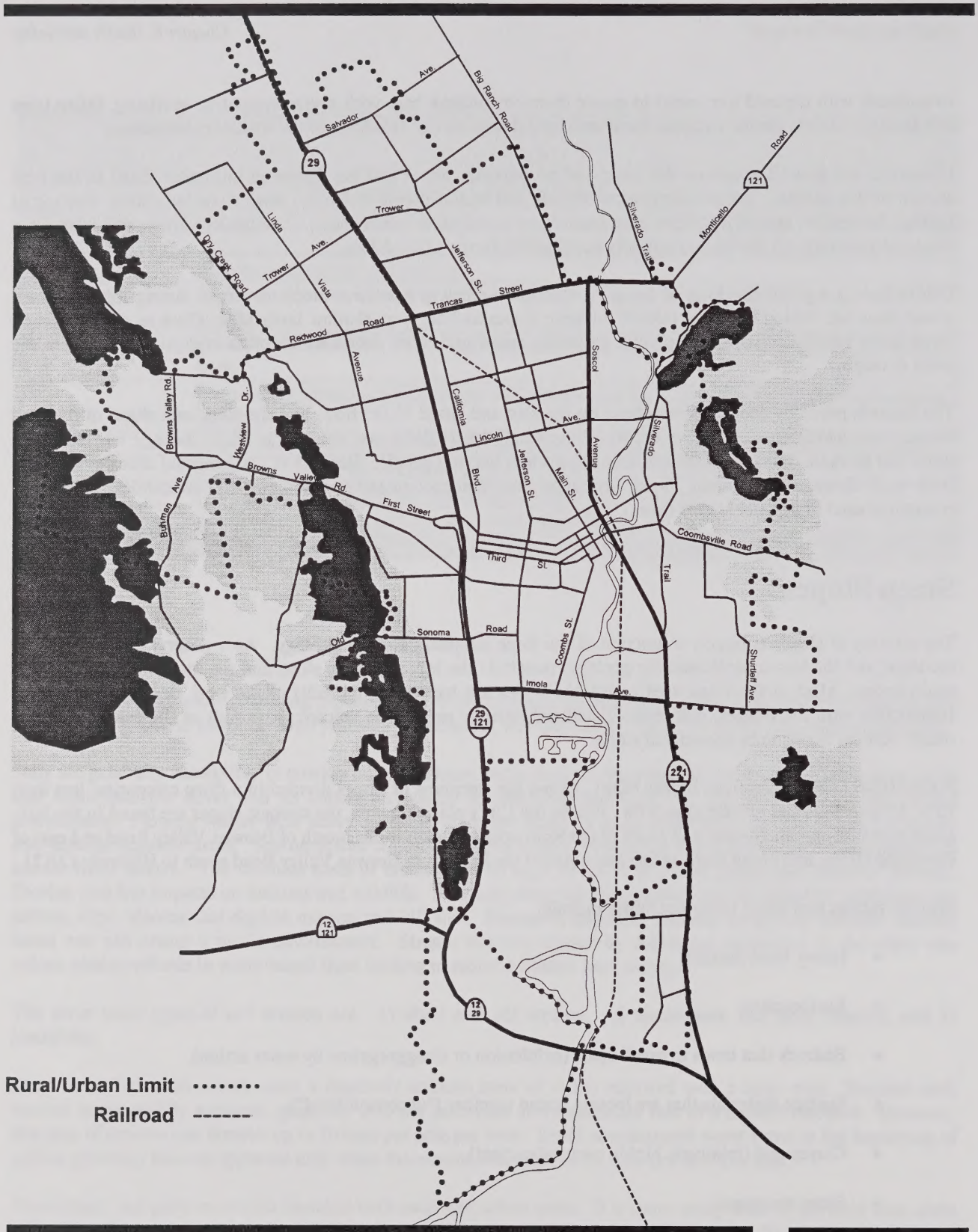
The stability of slopes is largely a function of the slope steepness and the geology. As a general rule, the steeper the slope and the less consolidated the geologic materials the less stable the slope and the more likely a landslide could occur. Most of the Napa area's unstable slopes are located on the hills of the west side of the valley in conjunction with the weaker, less consolidated sedimentary rock. The volcanic base rock of the east side allows nearly vertical slopes to be considered stable.

Figure HS-6 (The Generalized Slopes Map) , shows the steepness of slopes divided into three categories: less than 15%, 15% to 30% and greater than 30%. Within the City's planning area, the steepest slopes are found in the hilly areas west of Buhman Avenue and south of the Rollingwood subdivisions, north of Browns Valley Road and east of Pinewood Drive, and along (both inside and outside) the RUL from Browns Valley Road south to Highway 12/121.

Specific factors that affect slope instability include:

- Heavy local rainfall.
- Earthquakes.
- Bedrock that tends to break apart (exfoliation or disaggregation by water action).
- Surface materials that are loosely bound together ("unconsolidated").
- Clayey soil (relatively highly water-absorbent).
- Slope steepness.
- Changes to the land surface caused by development activities such as vegetation removal and grading on unstable slopes.

For the City, in general, the most important factors that affect soil erosion and landslides are: 1) underlying geologic materials; 2) slope steepness; and 3) development activities on unstable slopes.



Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan | Slope.DS4 | 12/98

Figure - HS 6

Generalized Slope

North

725' 1/2 Mile 1 Mile 3 Miles

0

Slopes less than 15%

Slopes between 15% to 30%

Slopes greater than 30%

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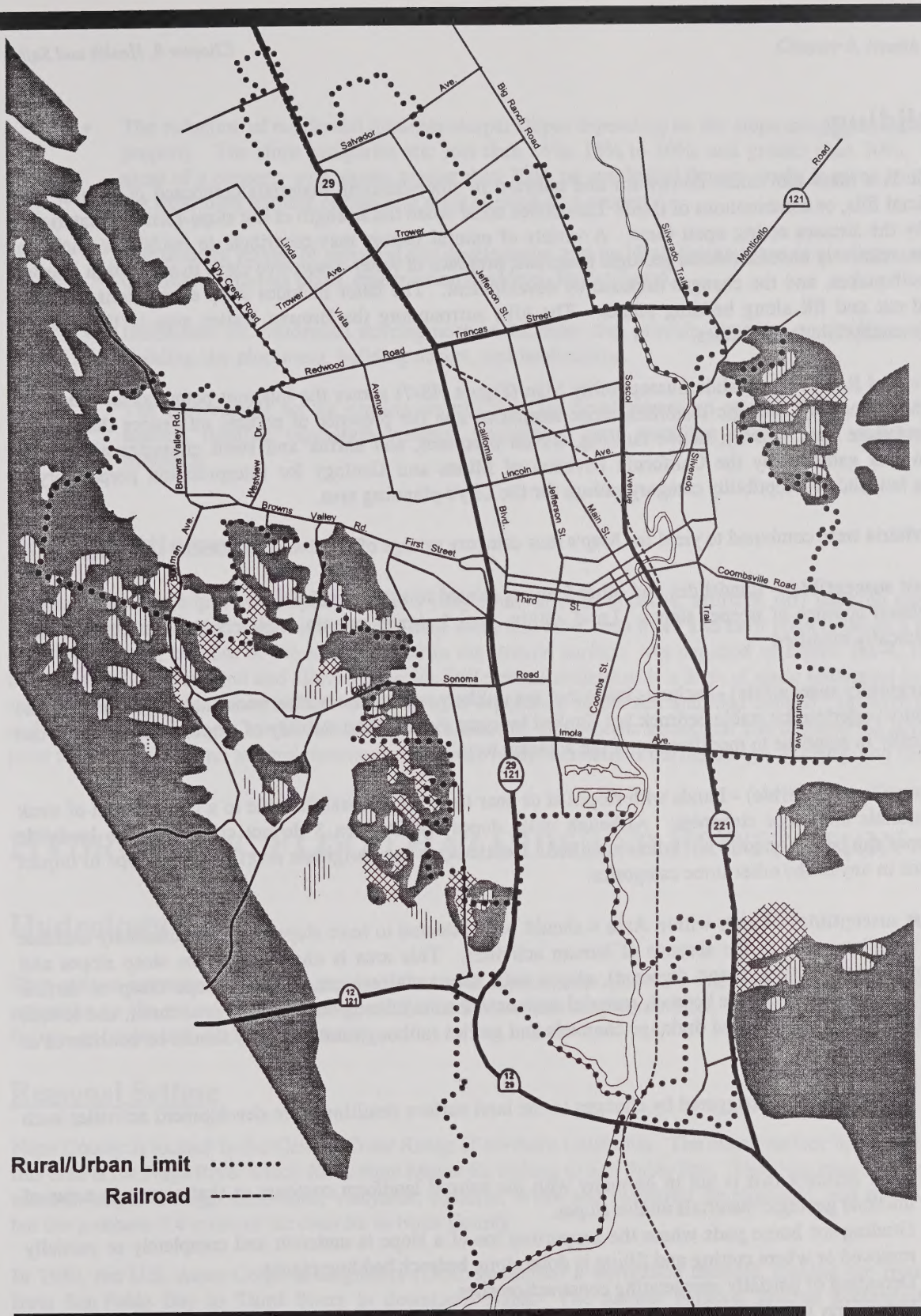

Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan | Landslide.DS4 | 12/98

Figure - HS 7

Generalized Relative Landslide Susceptibility

North

725' 1/2 Mile 1 Mile 3 Miles

0

Least

Marginal

General

Greatest

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Landsliding

A landslide is a mass movement downward and outward of slope-forming materials composed of natural rock, soils, artificial fills, or combinations of these. Landslides occur when the strength of the slope-forming materials is exceeded by the stresses acting upon them. A variety of natural factors may contribute to landslides, including steep slopes, relatively unconsolidated geologic materials, presence of water-absorptive clays in soils, high seasonal rainfall, earthquakes, and the changes imposed by development. The latter includes steep excavations, undercut slopes, and cut and fill along bedding planes. The hills surrounding the Browns Valley area to the west are particularly susceptible to landslides.

The Generalized Relative Landslide Susceptibility Map (Figure HS-7) shows the inherent potential for landslides based on the underlying geologic materials, slope steepness, and the presence of natural influences that tend to cause slope failure (e.g., gravity, active faulting, fluvial processes, soil shrink and swell characteristics). The information was gathered by the California Division of Mines and Geology for interpretation preparatory to establishing landslide susceptibility category ratings for the City's planning area.

The three criteria were combined to yield the Map's four category ratings of relative susceptibility to landsliding:

Area 1 (least susceptible) - Landslides and other features related to slope instability are very rare to non-existent due to a general absence of steeper slopes. Land within Area 1 should remain relatively stable unless the land surface is radically modified.

Area 2 (marginally susceptible) - Includes lands that are unlikely to have movement under natural conditions and ridgetops/spurs underlain by stable bedrock but flanked by steep slopes. The stability of slopes within Area 2 can change radically in response to modification of the adjacent terrain.

Area 3 (generally susceptible) - Lands with slopes at or near their limit of stability due to a combination of weak geologic materials and slope steepness. Although most slopes within Area 3 do not currently have landslide deposits, slopes can be expected to fail when modified. Debris flows may originate and flow downslope to impact adjacent lands in any of the other three categories.

Area 4 (most susceptible) - Lands within Area 4 should be considered to have slopes that are inherently unstable and subject to failure even in the absence of human activities. This area is characterized by steep slopes and includes most landslides (active and dormant), slopes with substantial evidence of downslope creep of surface materials (which can overlay stable bedrock material such as volcanics); lands underlain by mudstones; and terrace deposits. Also, the banks of incised drainage channels and gullies (although not mapped) should be considered as lying within Area 4.

Erosion and landslides can be triggered by changes to the land surface resulting from development activities such as:

- Road building that is not in harmony with the natural landform contours or that occurs in areas of unstable geologic materials and/or slopes.
- Grading for house pads where the supporting toe of a slope is undercut and completely or partially removed or where cutting and filling is done along bedrock bedding planes.
- Denuding or partially revegetating construction sites.
- Improperly installing drains.

The City's requirements for development on hillsides address these issues by providing regulations to prevent soil erosion, sedimentation and the scarring and cutting of hillsides. The most significant regulations are:

- The reduction of residential densities steeper slopes depending on the slope categories applicable to a property. The slope categories are: less than 15%; 15% to 30%; and greater than 30%. For those areas of a property with slopes greater than 30%, no residential density credit is given in calculating the maximum number of dwelling units allowed on a property.

- The detailed review of proposed site development and building design plans (e.g., slope analysis, site conditions, grading plans, construction drawings, landscaping).

- Guidelines for residential development on hillsides that provide direction on grading, site access, building site placement, building design, and landscaping.

- The requirement for an erosion control plan for development on steeper slopes. The plan must address limiting vegetation removal, replanting, and installing erosion and sediment control measures.

Static Settlement

Areas that are underlain by compressible soils (Bay Mud, alluvial deposits, artificial fill) undergo slow, natural settlement. This is called static settlement. Those areas that have been filled and built upon undergo a more rapid rate of settlement because of the loads applied to the ground surface. As depicted in Figure HS-4, the RUL is underlain by both Bay Mud and alluvial deposits. Differential settlement is a form of static settlement in which the rate and amount of settlement differs within an area depending on the soil and load applied. Damage from static and differential settlement can be minimized by conducting site-specific geological and engineering investigations prior to development and by implementing appropriate recommendations during design, grading, and construction.

HYDROLOGY, FLOOD HAZARDS AND PROTECTION

Hydrology

This section presents the hydrologic conditions and concerns for the RUL and surrounding areas and focuses primarily on the potential for flooding within the RUL which may result from heavy rainfall, catastrophic dam failure, or inadequate drainage capability.

Regional Setting

Napa County is located in the Central Coast Range of northern California. The major surface hydrologic feature of this area is the Napa River which flows from Mount St. Helena to San Pablo Bay. The river runs approximately 40 miles in length through mountains, vineyards, pastures, urban and industrial development, and marshlands. All but the southern 3.4 miles of the river lie in Napa County.

In 1950, the U.S. Army Corps of Engineers (COE) completed a navigation channel, making the river navigable from San Pablo Bay to Third Street in downtown Napa. The natural siltation process necessitates periodic dredging of the lower reaches of the river in the navigation channel. Since completion of the channel in 1950, the COE has dredged the river a total of four times.

Napa River Watershed

The Napa River drains a watershed encompassing approximately 426 square miles. Eight tributaries feed the Napa River, with four of these tributaries (Napa Creek, Redwood Creek, Sarco Creek, and Tolucay Creek) lying in the City of Napa. The most significant of these tributaries is Napa Creek, which drains approximately 15 square miles of watershed before merging with the Napa River at the First Street bridge.

Water Quality

Within the City of Napa, the Napa River can be characterized as a tidal influenced estuarine system. Upstream of Trancas Street, the Napa River is largely freshwater. As the river proceeds through the city, the water quality transitions to a brackish marsh. Tidal influences on the river affect both discharges to San Pablo Bay and water surface elevations extending upstream approximately 0.5 mile north of the City. More extensive discussion of water quality in the City of Napa may be found in the Chapter 7, Natural Resources, of the Background Report.

Stream Flows

Stream flows within the Napa River vary significantly from season to season and from year to year depending upon total rainfall. The average annual rainfall in the City of Napa is 24 inches (based on data recorded from 1877 to 1980), with total rainfall varying between 10 and 48 inches per year. Snowfall is rare within Napa County, and snowmelt does not contribute significantly to total runoff or streamflows. The "normal" Napa River channel capacity through the City of Napa is 12,000 cubic feet per second, although this varies throughout the length of the river depending on vegetation and debris, tidal conditions, and sediment deposits. The highest streamflows occur from December to March, while the lowest flows occur in the summer and early fall. During dry years, the river recharges the groundwater in the upper reaches of the river, resulting in intermittent streamflow in the upper and middle reaches. The groundwater discharges to the river farther downstream, maintaining streamflows in the lower reaches of the Napa River throughout the year.

Flooding of the Napa River usually occurs from December to February during periods of heavy rainfall. Flood events resulting in major damage to urban areas and farmlands typically result from rainfall events which persist over the entire Napa River basin for a period of 12 hours or more. Maximum river stages and discharges occur approximately 13 to 14 hours following the most intense rainfall periods.

Flood Hazards

Flood hazards typically result from intense rainfall, rapid snowmelt, and/or failure of a flood control structure, such as a dam, levee, or drainage channel. Flooding has implications for public safety and may result in loss of life, displacement, building destruction, and riverbed siltation. Flooding may also result in temporary loss of utilities, road, and bridges (which may cause transportation slowdowns), loss of goods and services, and the threat of waterborne diseases. The initial force of floodwaters can cause significant property damage and loss of life. The movement of the water can also carry large objects that act as battering rams or can stack up downstream, forming dams and creating additional flooding behind them. Standing water can remain for long periods, causing further property damage and creating health hazards associated with biological growth in the stagnant waters. The costs associated with flooding, in terms of both private and public expenditures, are significant, particularly in urban areas.

Despite the potential hazards involved with development in flood-prone areas, these areas remain desirable locations for a variety of land uses. In addition to agriculture, flood-prone areas frequently offer good recreational opportunities, and provide habitat for many forms of wildlife including threatened/ endangered plant and plant species.

History of Flooding in the Napa River Basin

Flooding occurs in the Napa Valley due to heavy rainfall which occurs predominantly from December through February. Streamflow of flood-producing magnitude is the result of precipitation over the entire river basin for a period in excess of 12 hours. After the periods of most intense rainfall, maximum river stages and discharges in the City can be expected from 13 to 14 hours later. Streamflow in the southern part of the Napa River is also affected by tide conditions which can affect the River as far upstream as Trancas Street.

Flood events in Napa have been recorded since 1892. Historically, the most significant flood events occurred in 1940, 1942, 1955, 1960, 1963, 1965, 1967, 1973, 1979, 1982, 1983, and most recently in February 1986. Major floods have resulted in damage to commercial, industrial, residential, and agricultural areas. Utilities, roads, bridges, and streets also are subject to damage and require repair and clean-up after a flood event. Flooding causes business slow down or stoppage, wage loss, and interruptions to traffic and the flow of goods. Flooding also has significant effects on human life and health (both physical and mental). The 1986 flood, which was the result of a 50-year storm, inundated most of the land adjacent to the Napa River and caused $100 million in property damage, killed 3 people, injured 27 people, destroyed 250 homes, and damaged 2,500 residences county-wide.

Flooding in the City occurs when the Napa River's flow at Oak Knoll Avenue (just north of the city limits) exceeds about 15,000 cubic feet per second. Some areas (typically agricultural land) remain flooded for several weeks due to inadequate drainage, but one to three days under water is more typical. Flood hazard conditions exist along the entire length of the Napa River as it flows through the City as well as along the course of several tributary creeks.

In particular, Napa Creek floodwaters have had a major impact on the City's core. For example, during the 1986 flood, Napa Creek overflowed on the south side of its banks, flooding areas along Coombs Street and the parkway Plaza Mall as the floodwaters coursed through the downtown, a replay of the February 1942 flood. Two other main tributaries, Milliken and Tulocay Creeks, add to the Napa River's flood flows within the City, but do not themselves cause significant flooding in the heavily developed parts of the City.

Floodplain and Floodway

The 100-year floodplain boundary defines the geographic area having a 1 percent chance of being in a flood in any given year. The boundary of the 100-year floodplain is typically used as the basic planning criterion to demarcate areas of unacceptable public safety hazards. Outside the floodplain boundary, the degree of flooding risk is not considered sufficient to justify the imposition of floodplain management regulations, while inside the 100-year floodplain, some level of regulation is desired to protect public health, safety, and welfare. The typical relationship between floodwater depth and property damage is shown in Table HS-3.

The 100-year floodplain is divided into a floodway and floodway fringe. The floodway is defined as the channel of a stream, plus any adjacent floodplain areas that must be kept free of development so that a 100-year flood can be carried away without substantial increases in flood heights. (FEMA defines "substantial increase" as 1.0 foot above the normal 100-year flood elevation.) Development within the floodway reduces the flood water carrying capacity and increases flood heights, thereby increasing flood hazards beyond the boundary of the floodway. Floodplain management therefore involves balancing the benefits of floodplain development against increased flood hazards.

The area between the floodway and the boundary of the 100-year floodplain is known as the floodway fringe. This portion of the floodplain could be used for development, as fill within this area will not increase the surface elevation of the 100-year flood more than 1.0 foot at any point.

Table HS-3 Relationship of Flood Water Depth to Property Damage		
Depth (feet)	**Percent of Damage to Structure**	**Percent of Damage to Contents**
1	8	0
2	26	35
3	45	60
4	60	70
5	70	75
6	80	80
7	85	90
8	100	100
9	100	100

Source: U.S. Army Corps of Engineers 1989

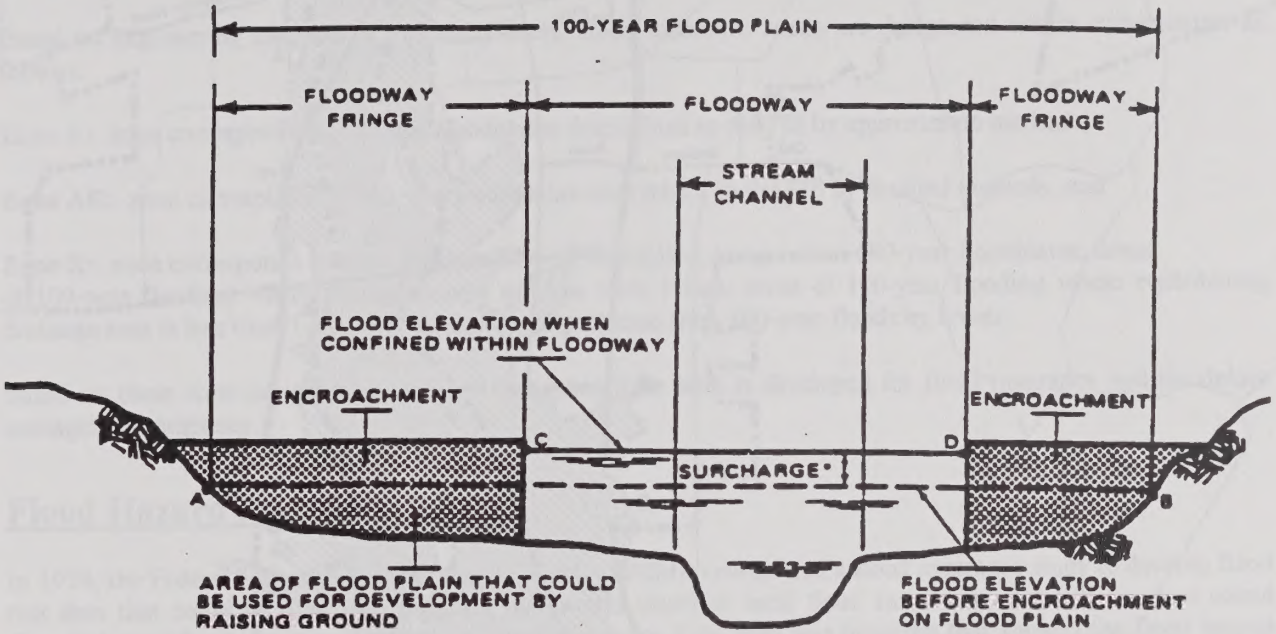
Different development standards may be formulated for the floodway and the floodway fringe. These standards have two functions. First, they are designed to minimize loss of life and property damage by controlling the types of land uses permitted and by prescribing certain construction methods. Second, they are intended to preserve the ability of the floodway to discharge the 100-year flood. Failure of floodplain regulators to recognize the latter function by prohibiting encroachment of the floodway will result in an increase in the geographic area of the 100-year floodplain. (Figure HS-8)

The location of the 100-year floodplain through the City of Napa is shown in Figure HS-9. As previously discussed, flooding typically results from rainfall events which persist over the entire Napa River basin for periods of 12 hours or more.

Flood Protection

National Flood Insurance Program

To provide protection against flood losses, the City and County of Napa participate in the National Flood Insurance Program (NFIP), which encourages state and local governments to adopt sound floodplain management programs. As required by the NFIP, the City has adopted a Floodplain Ordinance regulating all new development within the designated Floodplain Zone and requiring development within the floodway to demonstrate that there is no increase in flood water levels upstream or downstream. As a result of the strict Federal requirements within the floodway, the flood-prone area of Napa along Soscol Avenue has remained largely undeveloped due to the area's low elevation and oxbow configuration within the floodway.



LINE AB IS THE FLOOD ELEVATION BEFORE ENCROACHMENT.
LINE CD IS THE FLOOD ELEVATION AFTER ENCROACHMENT.
*SURCHARGE IS NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

Figure HS 8

Floodway Cross Section

(from FEMA Flood Insurance Study, 3/18/88)

City of Napa General Plan | Fldpln.DS4 | 12/98

Figure - HS 9

100 Year Floodplain and Floodway

North

440' 1/2 Mile 1 Mile 2 Miles

0

F.E.M.A. Flood-plain Boundary:

F.E.M.A. Flood-way Boundary:

Note: Information shown this page is for diagramatic use only. Consult Federal Emergency Management Administration Maps, Latest edition for specific property discriptions.

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Federal Insurance Studies

As part of the NFIP, the Federal Emergency Management Agency (FEMA) conducts Federal Insurance Studies (FIS) of areas subject to flooding to determine insurance rates and to assist local communities in developing sound floodplain management policies. Each FIS provides 100-year flood elevations and delineation of both 100- and 500-year floodplain boundaries and 100-year floodways. The 100-year flood is the FEMA base flood for floodplain management. The 500-year flood indicates additional areas of flood risk in the community.

Based on engineering analyses of FIS study areas, flood insurance zones are designated within communities as follows:

Zone A: zone corresponds to 100-year floodplains determined in the FIS by approximate methods;

Zone AE: zone corresponds to 100-year floodplains determined in the FIS by detailed methods; and

Zone X: zone corresponds to areas outside 500-year floodplain, areas within 500-year floodplains, areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where contributing drainage area is less than 1 square mile, and areas protected from 100-year floods by levees.

Based on these zone designations, a Flood Insurance Rate Map is developed for flood insurance and floodplain management practices.

Flood Hazard Area

In 1979, the Federal Emergency Management Agency (FEMA) completed a flood insurance study to develop flood risk data that could be used in a program that would establish local flood insurance rates and promote sound floodplain and floodway management. A Flood Insurance Rate Map was prepared that showed the flood hazard area (the area inundated by a 100-year flood), the floodway, the floodplain, and other flood-related information. This map was revised in 1988 to include data from the 1986 flood and was made available with a Flood Insurance Study publication explaining the floodway concept.

Although the program is voluntary, the City has chosen to participate in order to provide its residents an opportunity to obtain lower rates for flood insurance. In order to participate in the flood insurance program, the City's Floodplain Management Regulations (last revised in March, 1988) include special standards for development proposed for location in the floodplain and floodway, and regulations for analyzing such development.

The Flood Evacuation Area (FEA)

During the 1986 flood, many City residents affected by the flood would not evacuate their residences until the situation became so hazardous that emergency assistance was required. This caused the diversion of emergency services from other City areas of need into the areas inundated by floodwater. During the flood, the Public Works Department made field observations of those residential properties to which access by emergency vehicles was determined to be unacceptable (access to the properties, but not necessarily the properties themselves, was under at least approximately 18" to 24" of floodwater). The area in which those residential properties were located was called the Flood Evacuation Area or FEA (Figure HS-10, Flood Evacuation Area Map).

In order to reduce potential exposure to future flooding hazards, residential development in the FEA was placed under a temporary development moratorium to provide the City an opportunity to study alternative non-residential

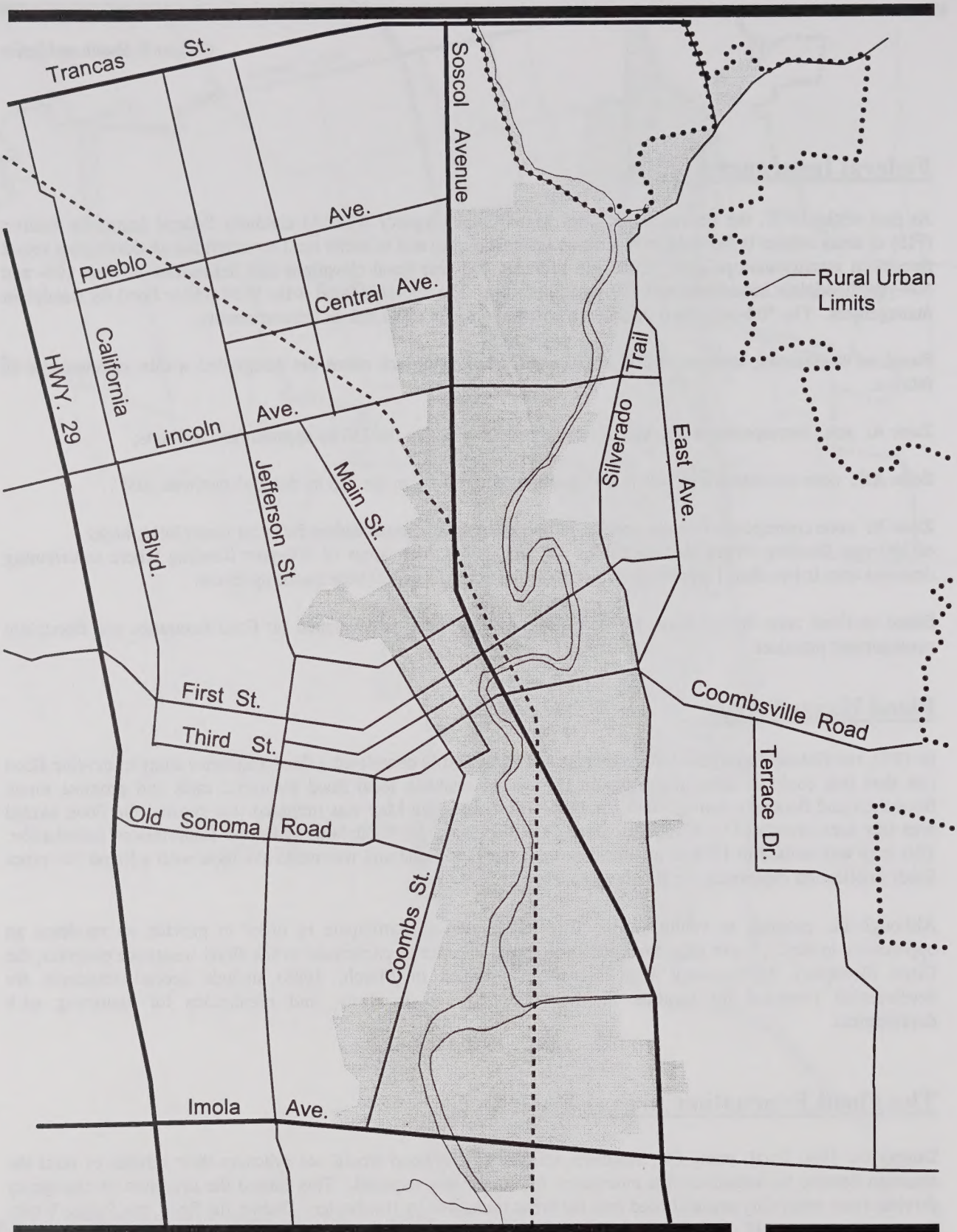

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Figure - HS 10

Flood Evacuation Area

North

0' 660' 1/4 Mile 1/2 Mile 1 Mile

Flood Evacuation Area

Source: City of Napa Public Works Department

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land uses for the vacant and underdeveloped residential properties. This study was completed in 1987 and culminated in reclassifying the undeveloped and underdeveloped residential parcels to non-residential land uses and adopting regulations for the future residential development of the remaining residential areas.

Flood Control

Historically, the emphasis for flood management in California has been on control of the water. Typical flood control projects have included the construction of reservoirs in upstream areas to retain and gradually release water, the construction of levees to confine water to the channel or designated area, the improvement of channels to increase their water carrying capacity, and the establishment of bypasses or diversions.

The construction of flood control structures does not entirely eliminate flooding events. Therefore, the regulation of land uses within areas subject to flooding is necessary to reduce injury and loss of life, to reduce structural damage caused by flooding, and to reduce public expenditures for additional flood control structures, emergency action, and post-disaster assistance. Land use regulations can be employed to limit the uses allowed in an area and to apply special building requirements to reduce the damage from flooding for those structures that are allowed within the floodplain area.

Historically levees have been built along the Napa River to protect the city from flooding during periods of elevated water levels. To qualify under FEMA criteria as sufficient flood protection, each of these levees must provide 3 feet of freeboard above the 100-year flood water elevation. Due to insufficient freeboard, a 1,000-foot stretch of the Lakepark levee along the right bank of the river (when facing downstream) extending to the Central Avenue-Soscol Avenue intersection is considered to fail by overtopping during a 100-year storm event.

History of Flood Control in Napa

The Federal Government first became involved with the Napa River in 1938 when "preliminary examinations and surveys" were authorized by the Secretary of War. Six years later House Document 626 of the 78th Congress was released, recommending channel improvement for reaches of the Napa River and construction of a dam to create a 37,000 acre-foot flood control and water conservation reservoir on Conn Creek. Although these features were authorized by the Flood Control Act of 1944, Congress never appropriated construction funds. As a result, during 1948, the City built a dam on Conn Creek to establish a 31,000 acre-foot water conservation reservoir.

The flood of 1955 compelled the Committee on Public Works in the House of Representatives to request the Board of Rivers and Harbors "to review reports on Napa River and its tributaries" and "determine the need for modifications of their recommendations in such reports and the advisability of adopting further improvements for flood control and allied purposes in view of the heavy damages caused by recent floods".

The Committee's request was fulfilled in 1963 by the "Review Report for Flood Control and Allied Purposes", which recommended that previously authorized flood control improvements above Soscol be rescinded and that the Federal Government should adopt a project in the basin below Trancas Street for flood control and recreation purposes.

The Napa River Flood Control project was authorized as a Federal project by the Flood Control Act of 1965, Public Law 89-298, as approved October 27, 1965. The project design was described in the House Document 222 and provided flood protection from Trancas Street to the vicinity of Soscol. This design was transmitted in a General Design Memorandum on December 8, 1970, by the District Engineer, San Francisco District, U.S. Army Corps of Engineers (COE) to the Director of Water Resources. The plan met with considerable resistance from local citizens and was substantially altered to alleviate environmental problems regarding esthetics, recreation and river access.

During the 1972-73 session of the California Legislature, the Assembly passed an urgency measure, Assembly bill 60, which authorized State funding for the 1970 plan for a flood control project. This bill also granted local authority to the Napa County Flood Control and Water Conservation District (NCFCWCD) for the implementation of the project.

The NCFCWCD is a countywide agency created by special act of the California Legislature in 1951. It is governed by the Napa County Board of Supervisors acting as the District's Board of Directors. Key to this implementation was acceptance of responsibility, as stipulated in the 1965 Flood Control Act, by local authorities for easements, rights-of-way, liability, operation and maintenance costs, utilities and bridge modifications, water rights, access land donation, shared recreational costs, mitigation costs, and operating responsibilities.

A new modified project design (1975 General Design Memorandum) was developed which included and incorporated information from local interests. The environmental impact statement for the project was completed in 1975. A referendum in 1976 was narrowly passed, confirming the acceptability of the project by the voters of Napa. In 1977, project construction was opposed in another referendum due to concerns over construction costs and environmental impacts, and the Napa Flood Control Project became inactive in 1977.

Following the devastating flood of 1986, the Napa County Flood Control and Water Conservation District petitioned Congress in 1987 to reactivate the flood control project. In response, the Army Corps of Engineers prepared an action plan and began engineering design studies in 1989. The Corps, as the responsible lead agency, subsequently prepared a Draft Environmental Impact Report (DEIR) which was available for public comments up until May, 1995. The Design Memorandum and DEIR described the flood control project as a joint effort between the City, County and the Army Corps of Engineers to provide flood control for a 100-year flood event. The project area covered 5.7 miles of the Napa River from the Trancas Street bridge to the Kennedy Park boat ramp and included a portion of Napa Creek from the point of confluence with the Napa River, extending upstream to Jefferson Street. The draft plan and DEIR considered four alternatives including 1) the no-action alternative; 2) the West Bank Channel Widening Plan; 3) the Oxbow Widening Plan; and 4) the updated 1976 General Design Memorandum Plan. Due to the potential significant environmental impact, Alternative 3 was not selected (Naclerio 1994). The selected flood control project described in the Design Memorandum (Alternative 2) consisted of levees, setback floodwalls, sheetpile walls, streambank protection, channel excavation, and a bypass channel construction at the oxbow. Maintenance roads, recreation trails, hazardous material review and remediation of project lands, and environmental mitigation were included in the plan.

In response to public concerns in the areas of design, visual impacts, recreational opportunities and other, environmental impacts, the COE flood control project's executive committee agreed to investigate a "Two Track Design Concept". Track 1, the primary track, proposed that the Army Corps of Engineers would revise the construction plans and respond to the concerns raised during public review of the DEIR. Track 2 proposed the establishment of a Technical Design Committee to study alternatives such as watershed management, dams, alternatives to flood walls and opportunities for river restoration under the guidance of a community coalition which would formulate a community consensus of alternatives to the proposed flood control project design.

By June 1996, a Community Coalition completed a lengthy set of workshops and public meetings, and proposed a plan for both flood protection and watershed management. Key features included: 1) land acquisition for river widening; 2) business and home relocation assistance; 3) recreational facilities and open space; 4) toxic cleanup; 5) an Oxbow "dry bypass"; 6) utility relocations and pumping plants; 7) levee and floodwall construction; and 8) bridge improvements.

In December 1997, using the Community Coalition's conceptual plan for a "Flood Management Project", the Corps reissued a General Design Memorandum (GDM) and Supplemental Environmental Impact Statement/Report (SEIS/SEIR). In March 1998, a ½ cent sales tax ballot initiative passed by a 68% vote, allowing the District to provide the required 50% local share of funding to implement the project.

The project has been named the "Napa River/Napa Creek Flood Protection Plan". The project design covers a 6 mile stretch of the Napa River, primarily in the City of Napa. It is comprised of four basic components: the

widening of the river channel through the creation of both marsh plain and flood plain terraces; the replacement of a series of bridges; the creation of a "dry-bypass" overflow channel in downtown Napa, and the use of a series of floodwalls and levees where necessary. Approximately 300 parcels will be acquired and 109 buildings will be removed in order to facilitate the project design. Construction is anticipated to start in 2000, with completion anticipated by 2006.

Dam Failure

A dam failure can occur as the result of an earthquake, as an isolated incident of structural instability, or during heavy rains that exceed design capacity and result in failure by overtopping. Within Napa County, there are four dams for which failure would result in inundation of portions of the City of Napa. These dams include the Conn Dam, located in Conn Creek Canyon approximately 15 miles northwest of Napa; the Milliken Dam, located in Milliken Creek Canyon approximately 6 miles northeast of Napa; the Rector Dam, located in Rector Creek Canyon, approximately 10 miles north of Napa; and the Eastside Reservoir within the City of Napa. The characteristics of each of the first three of these dams are shown in Table HS-4.

The size and location of the Eastside reservoir would result in localized impacts in vicinity of the reservoir in the event of dam failure and therefore it has not been included in the table overview of flooding that may result from failure at the larger reservoirs upstream of the City. The Eastside Reservoir is a 30 million gallon treated water reservoir with an earth fill dam lined on the interior with concrete. At the request of the Division of Dam Safety, the City has begun a seismic evaluation of the facility; preliminary results indicate that some minor improvements may be needed. Although the reservoir currently is filled with water, it has been disconnected from the City's water system while the City studies improvement options such as replacement with a water storage tank, covering the reservoir, and abandoning the reservoir and site.

As shown in Table HS-4, dam failures upstream of Napa could result in flooding within Napa in approximately 1 to 5 hours depending upon the particular dam location. Figure HS-11 shows that similar floodwater flow patterns through the City of Napa are predicted for the various dams, resulting in the same group of affected people and facilities (coinciding largely if not entirely with those areas lying within the floodway). Although the magnitude of anticipated flood damage is based upon the particular dam that fails, approximately 25 percent of the residences in the City of Napa would be affected in any case, primarily in the following three areas:

- South of Trancas Street between Main Street and Silverado Trail
- South of Lincoln Avenue between Jefferson Street and Silverado Trail
- South of First Street between SR-29 and Silverado Trail-Soscol Avenue

The maximum anticipated water elevations at various Napa locations resulting from failures of the various dams are shown in Table HS-5.

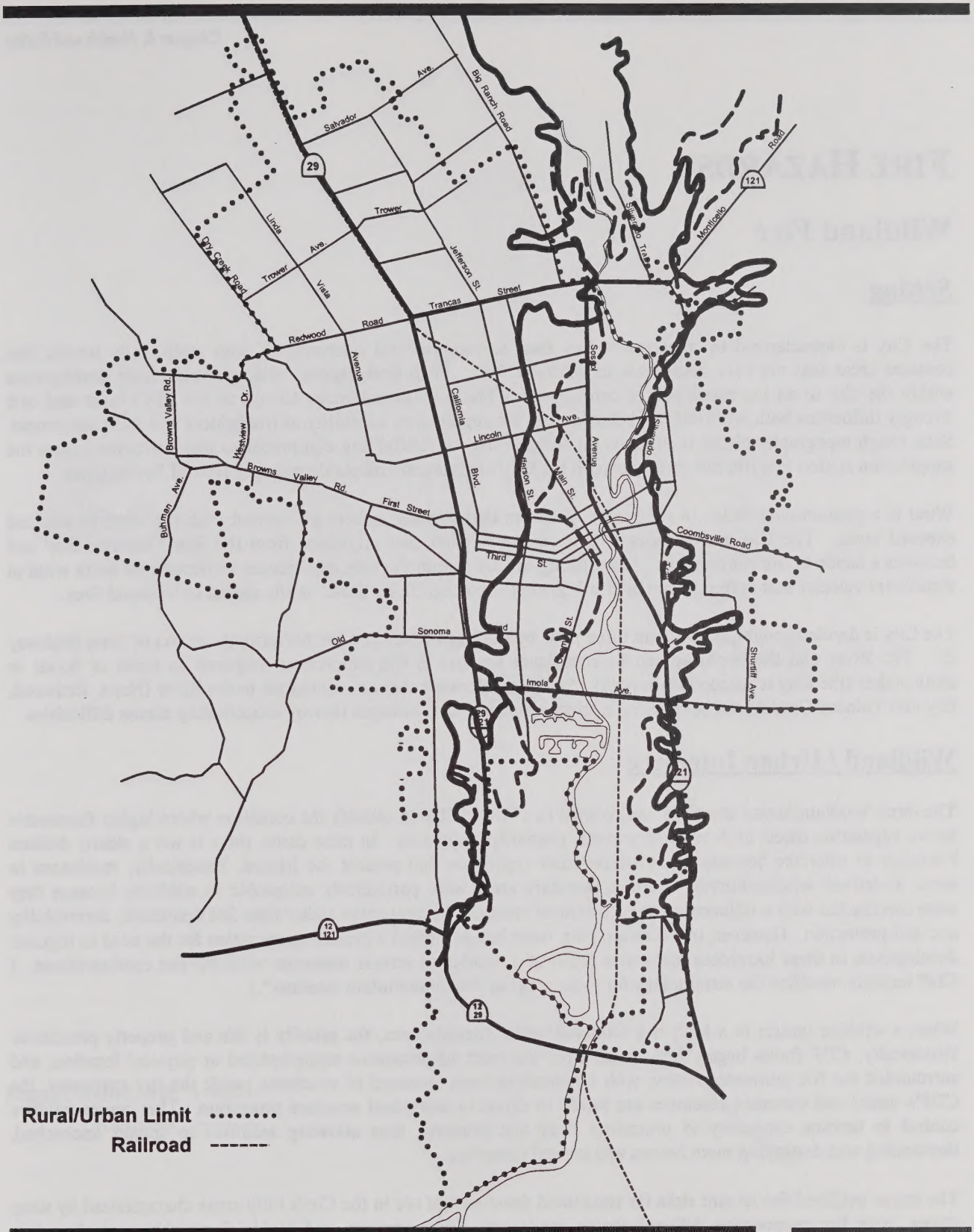
Additional detail regarding reservoirs can be found in Chapter 4, Community Services, of the Background Report.

Table HS-4 Dam Summary Table						
Dam	**Type**	**Crest Height (feet)**	**Storage Capacity (acre-feet)**	**Dam Location**	**Time to initial flooding (minutes)**	**Time to flooding in southern Napa (minutes)**
Conn Dam (City)	earth fill with concrete spillway	125	32,000	15 miles northwest of Napa, east of Rutherford	275	400
Milliken Dam (City)	concrete	110	2,000	6 miles northeast of Napa	55	200
Rector Dam (State)	earth fill	162	4,400	10 miles north of Napa	175	300

Source: 1986 General Plan Update -- City of Napa Public Works Department.

Table HS-5 Maximum Water Depth at Dam Failure			
Street	**Conn Dam**	**Milliken Dam**	**Rector Dam**
Trancas	16 feet	16 feet	NA
Lincoln	12 feet	7 feet	NA
First Street	16 feet	6 feet	NA
River Park Blvd.	6 feet	1 foot	NA

Source: 1986 General Plan Update.-- City of Napa Public Works Department



Rural/Urban Limit ·····

Railroad ------

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Figure - HS 11

Flood Water Inundation from Dam Failure

North

725' 1/2 Mile 1 Mile 3 Miles

0

Conn Dam Inundation

Milliken Dam Inundation

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FIRE HAZARDS

Wildland Fire

Setting

The City is characterized by a narrow valley floor surrounded and intermingled with steep, hilly terrain that contains areas that are very susceptible to wildland fires. Such fires expose residential and other development within the city to an increased risk of conflagration. The hilly/mountainous terrain to the City's west and east strongly influences both wildland fire behavior and the suppression capability of firefighters and their equipment. Such rough topography places limitations on accessibility for firefighting equipment so that travel time from the suppression station to a fire can greatly exceed the City's maximum acceptable response time of five minutes.

Wind is a predominant factor in the spread of fire in that burning embers are carried with the wind to adjacent exposed areas. The City has a characteristic southerly wind that originates from the San Francisco Bay and becomes a factor in fire suppression. Also, during the dry season the City experiences an occasional north wind of significant velocity that is recognized by fire fighters to be a significant factor in the spread of wildland fires.

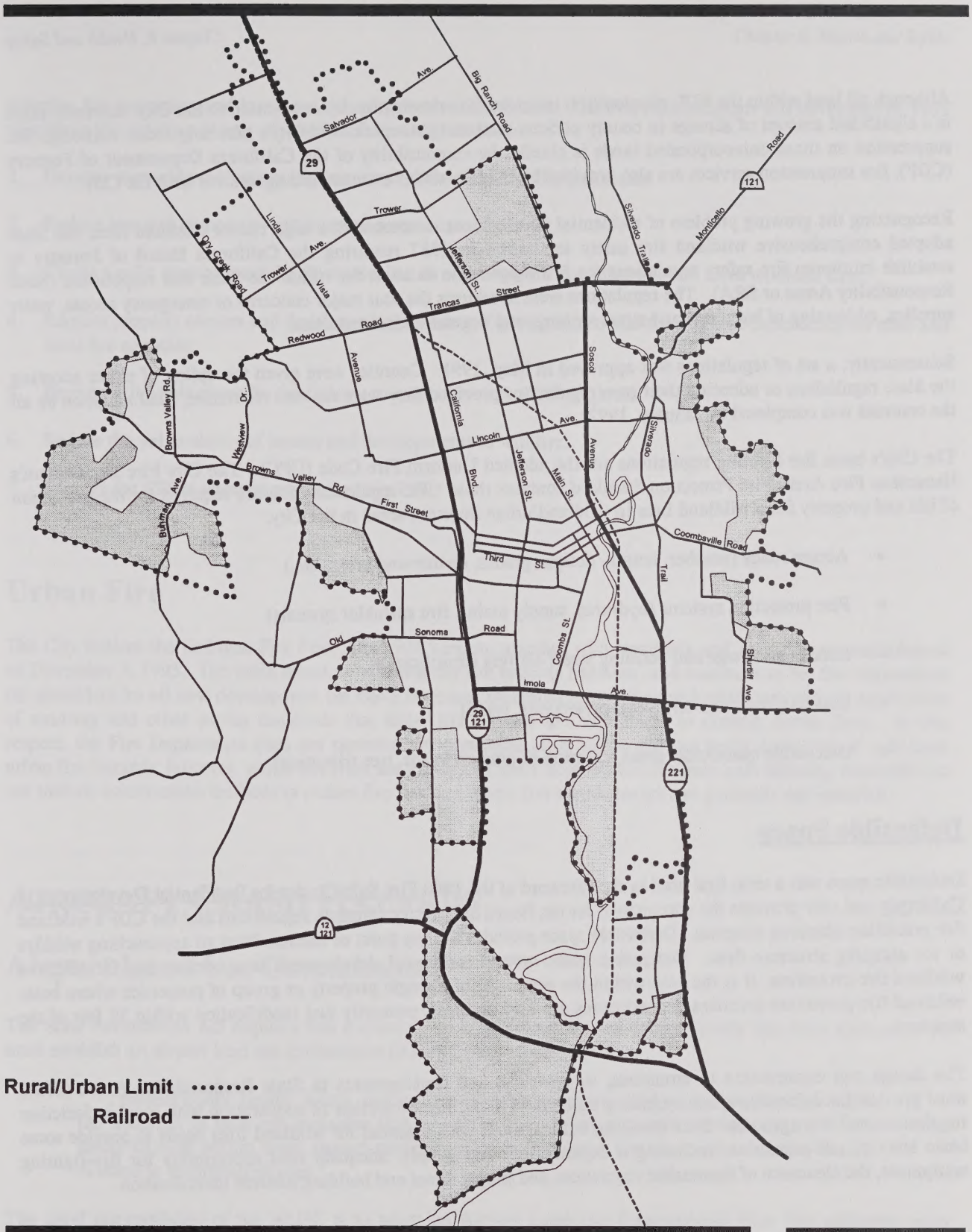
The City is divided geographically into three parts by the Napa River and the north/south section of State Highway 29. The River and the Highway can be significant barriers to fire suppression response in times of floods or earthquakes (the City is susceptible to both). Smaller waterways that are tributaries to the River (Napa, Redwood, Dry and Tulocay Creeks) can be barriers to street extensions and linkages thereby exacerbating access difficulties.

Wildland / Urban Interface

The term "wildland/urban interface" was coined in 1976 by CDF to identify the condition where highly flammable native vegetation meets high value structures, primarily residences. In most cases, there is not a clearly defined boundary or interface between the structures and vegetation that present the hazard. Historically, residences in these ill-defined wildland/urban intermix boundary areas were particularly vulnerable to wildfires because they were constructed with a reliance on fire department response for protection rather than fire resistance, survivability and self-protection. However, in the recent past, there has developed a greater appreciation for the need to regulate development in these hazardous areas as a result of a number of serious statewide wildland fire conflagrations. (CDF recently modified the terminology for these areas to "wildland/urban intermix".)

When a wildfire ignites in a high risk wildland/urban intermix area, the priority is life and property protection. Historically, CDF forces began their attack from the most advantageous topographical or physical location, and surrounded the fire perimeter. Now, with hundreds or even thousand of structures inside the fire perimeter, the CDF's initial and extended resources are forced to divert to individual structure protection. This causes wildfire control to become secondary to protecting lives and property, thus allowing wildfires to spread unchecked, threatening and destroying more houses and natural resources.

The major wildland fire hazard risks for residential development are in the City's hilly areas characterized by steep slopes, poor fire suppression delivery access, inadequate water pressure and highly flammable vegetation (see Figure HS-12, Wildland-Urban Interface Fire Hazard). This is not the typical City urban residential environment for which a fire department like the City's is organized and funded. For residential development in wildland fire hazard areas, built-in fire protection measures are imperative to reduce the risk to life and property.



City of Napa General Plan | Firehaz.DS4 | 12/98

Figure - HS 12

Wildland-Urban Interface Fire Hazard Areas

North

725' 1/2 Mile 1 Mile 3 Miles

0

Fire Hazard Area -

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Although all land within the RUL eventually is intended for urbanization by annexation to the City, currently there is a significant amount of acreage in county pockets scattered throughout the City's planning area. Although fire suppression on these unincorporated lands is chiefly the responsibility of the California Department of Forestry (CDF), fire suppression services are also provided by the City under a mutual aid agreement with the CDF.

Recognizing the growing problem of residential development in areas with a high risk of wildland fires, the State adopted comprehensive wildland fire safety legislation in 1987 requiring the California Board of Forestry to establish minimum fire safety regulations for fire suppression in areas for which the State was responsible (State Responsibility Areas or SRA). The regulations were to address the four major concerns of emergency access, water supplies, addressing of buildings and street signing, and vegetative fuel reduction.

Subsequently, a set of regulations was approved in May, 1991. Counties were given the option of either adopting the State regulations or adopting their own regulations provided they were not less restrictive; final adoption by all the counties was completed by January, 1992.

The City's basic fire fighting regulations are the adopted Uniform Fire Code (UFC). The City Fire Department's Hazardous Fire Areas Fire Protection Standard contains those UFC regulations that are required for the protection of life and property from wildland fires in wildland/urban intermix areas in the City:

- Access roads (number, length, design, grades, turnaround areas, etc.).
- Fire protection systems (hydrants, supply mains, fire sprinkler systems).
- Roadway signage and building street address identification.
- Building construction (roofs, projections, walls).
- Defensible space/clear areas (clearing of grasses/weeds, tree trimming).

Defensible Space

Defensible space was a term first used in the foreword of the 1980 Fire Safe Guides for Residential Development in California and now provides the cornerstone for the Board of Forestry's firesafe regulations and the CDF's wildland fire protection planning program. Defensible space provides the key point of defense from an approaching wildfire or for escaping structure fires. Defensible space around residential development is a cornerstone for effective wildland fire protection It is the area within the perimeter of a single property or group of properties where basic wildland fire protection practices and measures are implemented, primarily fuel modification within 30 feet of the structure.

The design and construction of structures, subdivisions and developments in State Responsibility Areas (SRA) must provide for defensible space including built-in wildland fire protection in cooperation with local jurisdiction regulations and fire agencies. Each dwelling built in areas with potential for wildland fires needs to provide some basic level of self-protection, including a dependable water supply, adequate road accessibility for fire-fighting equipment, the clearance of flammable vegetation, and proper street and building address identification.

The State's Responsibility

The State has the responsibility for wildland fire protection as a part of its mission of protection and enhancing California's natural resources. As homes and communities have been built in the wildlands, the State has taken an active role in proposing mitigation, recommending and assisting in preparing strategic plans and providing

effective fire protection and loss reduction programs and activities. The Fire Safe program was developed in 1963 to address the growing danger of wildland fires; its goals are to:

1. Develop statewide uniform minimum standard for wildland fire protection.

2. Reduce loss and damage to structures and resources.

3. Create a safer environment for those who live in areas that are potentially at risk from wildland fires.

4. Require property owners and developers to provide self-protection so that there is less dependency on state and local fire agencies.

5. Provide defensible space for firefighters to reduce the risk for firefighters.

6. Reduce the vulnerability of homes and developments to wildfire.

7. Support the CDF's resource protection mission.

Urban Fire

The City utilizes the Uniform Fire Code; the 1994 version, together with standards and amendments was adopted on December 5, 1995. The main thrust at reducing city fire hazards has been, and continues to be, the requirement for sprinklers for all new development (in many instances including remodeling and additions) and the application of roadway and other access standards that allow fire fighters and equipment to directly access fires. In this respect, the Fire Department does not perceive any particular areas of the City as being especially at risk from urban fire hazards; however, urban fire risks are greatest in older neighborhoods where past building standards did not include construction methods to reduce fire risk and where fire sprinklers are not generally not installed.

AIRCRAFT CRASH HAZARDS

Airport Land Use Commission

The State Aeronautics Act requires that a county with a public-use airport (Napa County has three such airports) must establish an airport land use commission (ALUC) whose function is to:

> ". . . protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."

The chief responsibility of the ALUC is to adopt an Airport Land Use Compatibility Plan that addresses each airport's anticipated future airport growth over a 20-year period. The Napa County Airport Land Use Compatibility Plan (ALUCP) was adopted April 22, 1991 and establishes land use compatibility policies and guidelines for local jurisdictions affected by airport activities.

The Napa County ALUC has the authority to review the general plans and specific plans of each affected local jurisdiction to determine consistency with the ALUCP. If a local plan is determined to be inconsistent with the

ALUCP, the affected local agency must either amend its general plan (and any applicable specific plan and zoning ordinance) or take specific steps to override the ALUC. Until either of these steps is resolved, all actions, regulations or permits within an affected area must be referred to the ALUC for a consistency determination. Once consistency with the ALUCP is achieved, only actions such as general plan or specific plan amendments must referred to the ALUC for a consistency determination.

A local jurisdiction may overrule the ALUC's determination if it:

- Holds a public hearing to reconsider the proposed action; and
- Makes a finding that the proposed action is consistent with the intent of the State Aeronautics Act; and
- Approves the action by a two-thirds vote.

Land Use Compatibility

One of the county's three airports, the Napa County Airport, lies just south of the City's planning area between the Napa River and Highway 29. The airport's potential impact area provides the basis for evaluating future land use compatibility on the lands surrounding the airport. The four principal land use impacts and compatibility considerations associated with the airport's activities are:

1. **Noise** - Usually perceived as the most significant adverse impact of airport activity because of its routine, everyday occurrence. The ALUCP concludes that existing land use designations, noise compatibility criteria and projected noise contours indicate that noise exposure levels will not present a significant problem with respect to land use compatibility in the airport's environs.

2. **Hazards to flight** - Requiring the protection of navigable airspace by preventing physical obstructions and other land use characteristics that could affect flight safety. The ALUCP establishes the critical areas for height limitations.

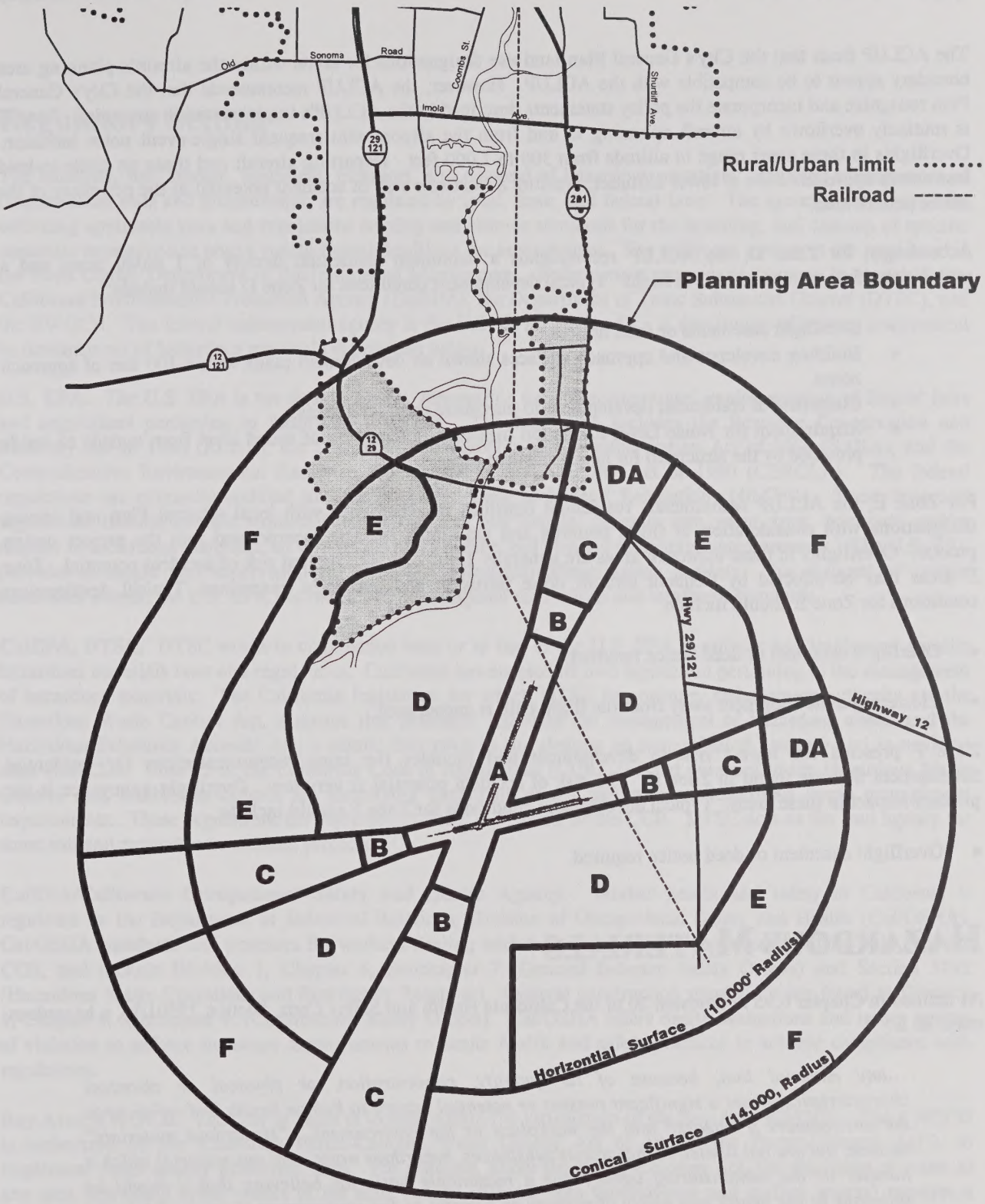
3. **Safety on the Ground** - Limiting people's exposure to risks of injury or damage to property in the event of an aircraft accident. Generally such risks are difficult to address because of their low probabilities of occurrence. Safety is a significant consideration at the airport because of the emphasis on flight training and the use of jet aircraft which are more difficult to control in emergencies than light single-engine planes.

4. **Overflights** - Evidenced by the annoyance expressed by people who live near airports but who are outside of the typically defined noise and safety zones. This is a subjectively experienced and expressed impact.

General traffic patterns at the airport are larger than usual for a general aviation facility primarily due to the airline training program (Japan Airlines) and the wide range of multi-engine and jet aircraft. Thus, surrounding land use compatibility is of particular concern. The county's Airport Area Specific Plan and General Plan do not provide for new residential use within the airport's traffic area. This level of compatibility needs to be confirmed in the City's General Plan.

The ACLUP identifies the primary planning issue as the need to maintain land use compatibility between the airport and future development in the airport's environs. The key issues are preventing the encroachment of incompatible development and limiting the exposure of surrounding development to aircraft flight hazards.

Two portions of the City's planning area (the Stanly Ranch and the Napa Valley Corporate Park) are within the planning area boundary of the ALUCP (Figure HS-13, Airport Land Use Compatibility Plan) which identifies the Stanly Ranch as an area of concern based on the expectation that it will develop with residential land uses. Because this area will continue to be affected by aircraft overflight, the ACLUP recommends restrictions on future residential development in Zone-D.



City of Napa General Plan | Airport.DS4 | 12/98

Figure - HS 13

Napa County Airport Land Use Compatibility Plan

North

Affected City Properties

Not to scale

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The ACLUP finds that the City's General Plan land use designations for lands within the airport's planning area boundary appear to be compatible with the ACLUP. However, the ACLUP recommends that the City's General Plan recognize and incorporate the policy statements described in the ACLUP's implementation strategies. Zone D is routinely overflown by aircraft operating to and from the airport with frequent single-event noise intrusion. Overflights in these areas range in altitude from 300 to 1,000 feet. Departing aircraft and those on circle-to-land instrument approaches are at lower altitudes, creating a moderate risk of accident potential at the periphery of the traffic pattern area.

Accordingly, for Zone D, the ACLUP recommends a maximum residential density of 1 du/40 acres and a prohibition of all uses hazardous to flight. Typical development conditions for Zone D should include:

- Overflight easements or deed notices.
- Building envelopes and approach surfaces shown on development plans within 100 feet of approach zones.
- Clustering of residential development to maximize open land areas.
- Requirement for Noise Level Reduction measures (attenuation of sound level from outside to inside provided by the structure) for noise-sensitive uses.

For Zone E, the ACLUP recommends residential densities in accordance with local General Plan and zoning designations with consideration of flight patterns and associated impacts incorporated into the project design process. Overflights in these approach areas are generally 1,000 feet with limited risk of accident potential. Zone E areas may be affected by frequent aircraft noise intrusion and overflight annoyance. Typical development conditions for Zone E should include:

- Overflight easement or deed notice required.

- Clustering of development away from the flight path is encouraged.

Zone F presents the lowest risk to development and includes the same recommendations for residential development that are found in Zone E. The risk of accident potential is very low. Overflight annoyance is the primary impact in these areas. Typical development conditions for Zone F should include:

- Overflight easement or deed notice required.

HAZARDOUS MATERIALS

As defined in Chapter 6.95 of Division 20 of the California Health and Safety Code, Section 25501(k), a hazardous material is:

> *...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.*

This section contains a discussion of the local regulatory framework and the storage, usage, and disposal of hazardous materials within the City of Napa. Because there is no citywide or county-wide hazardous materials management plan, information presented in this section was collected largely from interviews with the staff of the Napa County Department of Environmental Management.

Regulatory Setting

The handling, use, storage, treatment, transport, and disposal of hazardous materials, including management of contaminated soils and groundwater, are regulated by local, state, and federal laws. The agencies responsible for enforcing applicable laws and regulations develop and enforce standards for the handling, and cleanup of specific materials determined to pose a risk to human health or the environment. The enforcing agency at the local level is the Napa County Department of Environmental Management. Enforcement agencies at the state level include the California Environmental Protection Agency (CalEPA), the Department of Toxic Substances Control (DTSC), and the RWQCB. The federal enforcement agency is the U.S. EPA, Region IX. A description of agency involvement in management of hazardous materials is provided below.

U.S. EPA. The U.S. EPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. The legislation includes the Resource Conservation and Recovery Act of 1986 (RCRA), the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The federal regulations are primarily codified in Title 40 of the Code of Federal Regulations (40 CFR). These laws and regulations include specific requirements for facilities that handle, generate, use, store, treat, transport, and/or dispose of hazardous materials, as well as for investigation and cleanup of contaminated property. The U.S. EPA provides oversight and supervision for some site investigation/remediation projects. For disposal of certain hazardous wastes, the U.S. EPA has developed land disposal restrictions and treatment standards.

CalEPA, DTSC. DTSC works in conjunction with or in lieu of the U.S. EPA to enforce and implement specific hazardous materials laws and regulations. California has enacted its own legislation pertaining to the management of hazardous materials. The California legislation for which DTSC has primary enforcement authority are the Hazardous Waste Control Act, a statute that primarily regulates the management of hazardous waste, and the Hazardous Substance Account Act, a statute that governs the cleanup of contaminated property and is modeled after CERCLA. Title 22 of the California Code of Regulations (CCR), enacted pursuant to the Hazardous Waste Control Act, establishes criteria for identifying hazardous wastes and presents hazardous waste management requirements. These regulations are reprinted in Title 26, Toxics, of the CCR. DTSC acts as the lead agency for some soil and groundwater cleanup projects.

CalEPA/California Occupational Safety and Health Agency. Worker health and safety in California is regulated by the Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA). Cal/OSHA standards and practices for workers dealing with hazardous materials are contained in Title 8 of the CCR, and include Division 1, Chapter 4, Subchapter 7 (General Industry Safety Orders) and Section 5192 (Hazardous Waste Operations and Emergency Response). General construction regulations are found in Division 1, Chapter 4, Subchapter 4, (Construction Safety Orders). Cal/OSHA offers onsite evaluations and issues notices of violation to enforce necessary improvements to onsite health and safety practices to achieve compliance with regulations.

Bay Area RWQCB. The City of Napa is located within the jurisdiction of the Bay Area RWQCB. The RWQCB is authorized by the California Porter-Cologne Water Quality Act of 1969 ("the Porter-Cologne Act"), to implement water quality protection laws. For example, under the Porter-Cologne Act, the discharge of waste to any area that could affect waters of the state (which includes both groundwater and surface waters) requires a permit or a waiver of the permit from the RWQCB or its umbrella agency, the State Water Resources Control Board. The RWQCB also implements some federal water protection laws on behalf of the U.S. EPA, including issuing National Pollution Discharge Elimination System (NPDES) permits for discharges to waters of the U.S. When the quality of the groundwater or the surface waters of the state is threatened, the RWQCB has the authority to require investigations and remedial actions.

Napa County Department of Environmental Management. Pursuant to state law and local ordinance, the Napa County Department of Environmental Management conducts inspections and operates several environmental programs to ensure proper handling, storage, and disposal of hazardous materials and proper remediation of contaminated sites.

Hazardous Materials Storage, Management and Disposal

Within the City of Napa, there are no oil refineries, chemical manufacturing plants, bulk storage facilities, or other industrial or commercial operations which would commonly be associated with large-scale storage of hazardous materials. Bulk chemical storage is limited primarily to small quantity storage of hazardous materials in individual commercial businesses, petroleum storage in underground storage tanks, and utility storage of water treatment chemicals.

Petroleum Storage

Petroleum products are stored in underground storage tanks at gasoline stations and plants throughout the City of Napa. The two most significant storage sites include the City corporation yard (5 tanks with approximately 45,000 gallons total storage capacity) and the Napa Valley Petroleum gasoline plant (with approximately 58,000 gallons total storage capacity). In general, gasoline plants and stations are concentrated along the Napa River below Eighth Street, Oil Company Road, Lincoln and Soscol, and Jefferson Street.

Water Treatment Plants

Bulk chemical storage of hazardous materials does occur at water treatment plants operated by the City of Napa. Water treatment chemicals are stored at the City's three water treatment plants including the Hennessey, Jameson Canyon and Milliken Water Treatment Plants, although all three of these plants are located outside and downwind of Napa city limits.

Miscellaneous Commercial and Industrial Usage

Although wineries throughout Napa County typically store gaseous ammonia and sulfur dioxide for use in refrigeration and pH adjustment, there are currently no wineries located within the city boundaries.
In the past, several tanneries stored small quantities of solvents, discharging heavy metals in their wastewater streams. Since 1990, no tanneries have operated in the City of Napa, and hazardous materials associated with past operations are limited to contaminated soils on isolated sites associated with former tannery use.

Hazardous Materials Management

Storage and disposal of hazardous materials within the City of Napa is under the jurisdiction of the Napa County Department of Environmental Management. Specific responsibilities include administration of an underground storage tank program, and oversight, review, and monitoring of individual business plans or hazardous materials management plans (HMMPs) required for all facilities storing hazardous materials above threshold quantities within the County. Approximately 1,000 companies throughout Napa have HMMPs on file with the County. A county-wide HMMP is currently in a draft stage; there is no estimated completion date for this report. As such, there is no centralized inventory of all hazardous materials stored within the county, other than the accumulated individual HMMPs stored at the County offices.

The Department of Environmental Management is currently in the process of reviewing the individual HMMPs in order to generate a ranking system of facilities based on potential hazards. The County has developed a preliminary ranking of the facilities on the basis of chemicals stored, type of containment, and proximity to human

receptors. This preliminary ranking indicates that the Imola Plant and the Soscol Plant (wastewater treatment plants discussed above) are the two highest ranking facilities within the City and County of Napa. Once the rankings have been finalized, the most hazardous facilities will be required to submit Risk Management Prevention Plans (RMPPs) to assess the risks associated with chemical release from these facilities and to develop mitigation plans to minimize these risks to the community.

Hazardous Waste Disposal

There are no authorized off-site treatment or disposal sites for hazardous wastes within the City or County of Napa.

The County Department of Environmental Management maintains a listing of approximately 200 to 250 leaking and/or contaminated USTs located at approximately 100 sites throughout the County. Contamination at these sites is limited primarily (if not entirely) to hydrocarbon products released from fuel storage tanks. Tanks remain in the ground at only 10 to 15 of these sites as the majority of the contaminated UST sites were identified during actual tank removal procedures.

Hazardous Materials Transport

According to the 1986 General Plan Update, hazardous materials transport within the City of Napa consists of truck transport of gasoline, liquid petroleum, and fertilizers. This transport is conducted primarily along State Routes 12, 29, 121, 128, and 221. Concerns due to hazardous materials transport includes the potential for spills, collisions, or combustion of these products which could result in toxic emissions, traffic disruption, pollution, or fires within the City.

County Hazardous Materials Management

Napa County has prepared a Preliminary Draft Integrated Waste Management Plan (December 1, 1995) that incorporates the City's SREE and HHWE. Also, the county has submitted an application (December 29, 1995) to be approved as the Certified Unified Program Agency (CUPA) for all of the County's jurisdictions. Currently, the County Department of Environmental Management (DEM) coordinates with the County Agricultural Commissioner Office (ACO) to implement the following hazardous materials programs:

- Hazardous Waste Generator Program (HWG).
- Above Ground Tank Spill Prevention Control and Countermeasure Program (SPCC).
- Hazardous Materials Business Plans (HMBP).
- Risk Management and Prevention Plan (RMPP).
- Underground Storage Tank Program (UST).

SPCC and HWG - These programs are implemented on a voluntary request basis by businesses to assist with compliance, to respond to complaints, and for addressing governmental facilities. The programs will be expanded with DEM handling non-agricultural businesses and facilities.

HMBP - DEM handles non-agricultural businesses. Its program has been undergoing an internal reevaluation to update inspection files with a major emphasis on businesses that have not been inspected.

RMPP - DEM handles this program which excludes agricultural businesses. DEM has established a site priority ranking and is developing a local implementation program.
UST - DED handles the UST program. Many underground storage tanks have been removed and the program remains active.

City Hazardous Materials Management

The City adopted a Source Reduction and Recycling Element (SRRE) on October 1, 1991 pursuant to the requirements of the California Integrated Waste Management Act. The SRRE includes a separate Household Hazardous Waste Element (HHWE) which establishes short- and medium-term goals to reduce the amount of household hazardous wastes stored within the home for future disposal.

Household hazardous wastes (HHW) include flammables, pesticides, corrosives, oxidizers, and miscellaneous items such as car batteries. The City's goal is to divert 50% of HHW now disposed in landfill by the year 1995 and 100% by 2000. The HHWE established two goals for the short-term 1990-95 planning period:

1. Development of a household hazardous waste information/public education program for City residents emphasizing household hazardous waste reduction through purchasing decisions and the identification of locally available reuse and recycling opportunities.

2. Periodic collection programs in conjunction with an education program to divert three categories of HHW from landfill. The targeted materials are car batteries, used motor oil and latex paint which together comprise the greatest percentage of HHW in solid waste disposal.

For the medium-term period (post-1995), the goal is to re-evaluate, modify and implement changes to the short-term program.

EMERGENCY RESPONSE

Emergency Response Plans

The City's emergency response plan is based on the Standardized Emergency Management System (SEMS) which is required by Government Code 8607(a) for responding to major emergencies. The purpose of SEMS is to provide an effective response to multi-agency and multi-jurisdiction emergencies in the state. To this end, SEMS incorporates the use of the Incident Command System (developed for fighting state fires), existing mutual aid agreements, multi- and inter-agency coordination, and a multi-level organizational/response structure.

The five SEMS organizational/response levels are:

1. **Field Response Level** - Emergency response personnel and resources carry out tactical decisions and activities in direct response to an emergency incident or threat.

2. **Local Government Level** - Cities, counties and special districts are included at this level. Overall emergency response and recovery is managed by the responsible local government. In order to be eligible for state funding of response-related personnel costs, the local government must use SEMS if its emergency operations center (EOC) is activated or if a local emergency is declared

3. **Operational Area Level** - This is an intermediate level of the state's emergency services organization which includes all political agencies up to and including the county level. However, the operational area is not managed by the county; the decision on organization and structure is made by all the governing bodies within the operational area.

4. **Regional Level** - The state is divided into six mutual aid regions each of which manages and coordinates information and resources among the operational areas in its mutual aid region as well as coordinating overall state support for emergency response within the region.

5. **State Level** - This level coordinates mutual aid among the mutual aid regions, between the regional and state levels, and between the state and federal disaster response system.

SEMS provides for the optimal mobilization, deployment, utilization, tracking and demobilization of mutual aid resources. It is designed to be adaptable to various kinds of disasters and to the needs of emergency responders. For the City, SEMS local government emergency situations are:

- The City declares a local emergency pursuant to Government Code 2407(a)(2) which would usually require the activation of the City's EOC.
- The City activates its EOC pursuant to Government Code 407(a)(1).
- The City activates its EOC and requests (at the next higher level) operational area EOC activation pursuant to Government Code 407(a)(1).

The City has an active SEMS training program. The amount of training each city employee receives is determined by the level of participation required during a disaster. For example, through training, the City will reassign emergency responders from non-emergency disaster functions to field operations.

Critical Facilities

In order for the City to effectively carry out SEMS, certain critical facilities must remain functional. These include buildings such as the three fire stations and the police department (which is also the City's EOC), Queen of the Valley Hospital, major school buildings and other shelter facilities. The PG&E substation on Burnell Street, the phone company facilities, the City's bridges, the communications transmission tower at City Hall and other locations are all critical to the effective operations of the SEMS program.

Evacuation Routes

Evacuation routes can be roadways, waterways or even airports provided that provision is made for the orderly removal of people and possessions from an endangered area. Napa County has identified county-wide evacuation routes; those applicable to the City are shown in Figure HS-14 as follows:

- To the south, Highway 29 to Vallejo and Highway 80.
- To the west, Old Sonoma Road and Highway 12 for access to Sonoma County.
- To the north, Highway 29 and the Silverado Trail for access to Sonoma and Lake Counties.
- To the east, Highway 121 to Winters and Highway 12 east through Jamison Canyon to Highway 80.

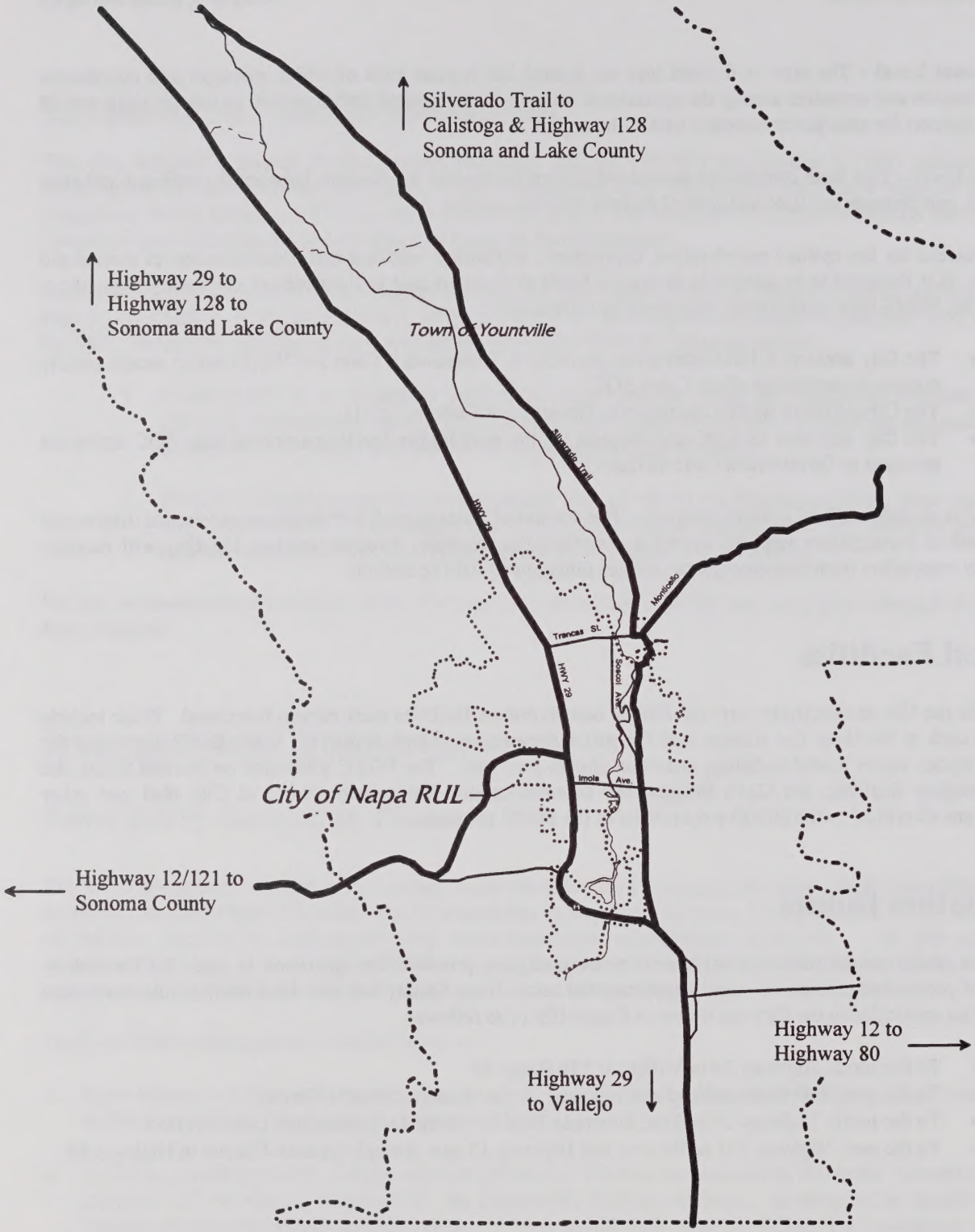

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Figure - HS 13

Evacuation Routes

North

Evacuation Routes

2640' 11/2 Mile 3 Mile 9 Miles

0

Napa County Line

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NOISE

Noise is generally defined as unwanted or annoying sound, and may be considered as having an adverse effect on the environment. The State of California recognizes the relationship between noise and noise sensitive land uses, and emphasizes the need to control noise through land use regulation. In 1982, the City of Napa adopted a Noise Element with the General Plan to address noise-related effects on existing and planned land uses. This background report is an update to the 1982 plan and will become the basis of the 1994 Update of the General Plan and its elements.

Definition and Measurement of Noise

By definition, airborne sound is a rapid, small-scale fluctuation of the instantaneous air pressure above and below the local barometric pressure. Sound levels are usually measured and expressed in decibels (dB). Most sounds that are perceived in the environment do not consist of a single frequency, but rather a mixture of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate sound. The method commonly used to quantify environmental sounds consists of evaluating all the frequencies of a sound according to a weighting system that reflects the fact that human hearing is less sensitive at low frequencies and at extremely high frequencies than at the mid-range frequencies. This is called "A" weighting, and the decibel level measured is called the "A" weighted sound level and is denoted dB(A).

Changes in A-weighted noise levels follow certain principles on human perception. An increase or decrease in sound level of one decibel (dB) cannot be perceived outside of the laboratory; a three dB change, however, is considered a perceivable or audible difference. A change in sound level of at least five dB is required before any noticeable change in community response would be expected; and a 10 dB change that is subjectively heard as an approximate doubling in loudness would almost certainly cause an adverse community response.

Noise Level Descriptors

Although the A-weighted sound level may adequately show the level of environmental noise at any instant in time, community noise levels vary continuously over time and location. Most environmental noise includes a conglomeration of noise from distant sources that creates a relatively steady background noise in which no particular source is identifiable. Noise measurement metrics such as Community Noise Equivalent Level (CNEL), Equivalent Sound Level (Leq) and Day-Night Average Level (Ldn) have been developed to quantify sound over time and are widely accepted. Ldn is the weighted average sound level for a 24-hour day. It is calculated by adding 10 decibels to noise during the night (10:00 PM to 7:00 AM) and is commonly used in establishing noise exposure guidelines for specific land uses. This adjustment is to account for the increased sensitivity to noise during quiet hours. The Leq is the measured time-averaged noise level. CNEL weights night-time and evening noise levels slightly differently than Ldn resulting in a 1 dB increase in estimated sound levels over the Ldn descriptor. The 1982 City of Napa Noise Element uses the Ldn expression. Airports, including the Napa County Airport, typically use CNEL as the noise descriptor for their operations.

Sensitive Receptors

Noise-sensitive receptors are land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise. They may include residential (single and multifamily dwellings, mobile home parks, dormitories, and similar uses); transient lodging (hotels, motels and similar uses); hospitals, convalescent homes; and public or private educational facilities and libraries. Noise standards are often developed based on compatibility of these land uses with certain noise environments.

Table HS-6
Sound Levels of Typical Noise Sources and Noise Environments
(A-Weighted Sound Levels)

Noise Source (at a Given Distance)	Scale of A-Weighted Sound Level in Decibels	Noise Environment	Human Judgment of Noise Loudness (Relative to a Reference Loudness of 70 Decibels*)
	140		
Military Jet Take-off with After-burner	130	Carrier Flight Deck	
Civil Defense Siren (100 ft)			
Commercial Jet Take-off (200 ft)	120		Threshold of Pain *32 times as loud
	110	Rock Music Concert	*16 times as loud
Pile Driver (50 ft)			
Ambulance Siren (100 ft)	100		Very Loud *8 times as loud
Newspaper Press (5 ft)			
Power Lawn Mower (3 ft)			
Motorcycle (25 ft)	90	Boiler Room	*4 times as loud
Propeller Plane Flyover (1000 ft)		Printing Press Plant	
Diesel Truck, 40 mph (50 ft)			
Garbage Disposal (3 ft)	80	High Urban Ambient Sound	*2 times as loud
Passenger Car, 65 mph (25 ft)			
Living Room Stereo (15 ft)			
Vacuum Cleaner (3 ft)	70		Moderately Loud *70 dB (Reference Loudness)
Electronic Typewriter (10 ft)			
Normal Conversation (5 ft)	60	Data Processing Center	*1/2 as loud
Air Conditioning Unit (100 ft)		Department Store	
Light Traffic	50	Private Business Office	*1/4 as loud
Bird Calls (distant)			
	40	Lower Limit of Urban Ambient Sound	Quiet *1/8 as loud
Soft Whisper (5 ft)	30	Quiet Bedroom	
	20	Recording Studio	Just Audible
	10		Threshold of Hearing
	0		

Source: Ogden Environmental, 1995.

Typical Noise Sources and Their Effects

One of the most prominent consequences of the increasing complexity of urban and suburban living is our increased exposure to noise.

Mobile and Stationary Sources

Aircraft, automobiles, trucks, railroads, construction equipment, factories and even home appliances contribute to the noise environment of modern life. Generally, motor vehicles are the most pervasive contributors to urban noise. Expanding development in cities produces a corresponding increase in traffic, which in turn leads to increased noise levels. Other major noise sources common in the urban and suburban environment are power gardening equipment, amplified music, power tools, and air conditioners. Table HS-6 presents sound levels for typical noise sources.

Health Effects of Environmental Noise

Noise can produce a number of unwanted and unpleasant effects, depending on the characteristics of the sound and when it occurs. The usual consequences of noise are associated with speech interference, distractions at home and at work, disturbance of rest and sleep, and the disruption of recreational pursuits. The long-term effects of noise are physical as well as psychological. Physical effects may include headaches, nausea, irritability, high blood pressure, changes in the heart and respiratory rate, and increased muscle tension. Prolonged exposure to high noise levels may result in hearing damage. Psychological effects may result from the stress and irritability associated with a change in sleeping pattern due to noise. In addition, noise may adversely affect property values or job performance and can sometimes lead to accidents and injury.

Existing Regulatory Framework

City of Napa Policies and Controls

Environmental noise within the City is regulated by the General Plan and by the Municipal Code. The General Plan policies are included in the current update, General Plan Policy Document, the Municipal Code requirements are listed below.

Noise Ordinance: The City of Napa has adopted a noise ordinance in Title 8, Health and Safety, Chapter 8.08 of the Municipal Code to control the noise associated with outdoor sound systems, commercial activity, and construction activities. For outdoor loudspeaker or public address systems audible outside of a building, the activities must be approved or permitted by the city manager. For commercial activities adjacent to residential/professional office districts, noise levels shall not be audible at the common property line between the hours of 9 p.m. and 7 a.m. Construction activities are limited to the weekday hours of 7 a.m. and 7 p.m. and 8 a.m. and 4 p.m. on weekends. Further limitations are placed on equipment start-ups, deliveries, and equipment maintenance or cleaning.

State of California Policies

A number of state agencies have prepared guidelines that identify standards and regulations concerning noise compatibility in the work place and in residences.

California Department of Transportation: In the State of California, the California Department of Transportation (Caltrans) regulates noise levels along state highways and interstates. Caltrans has adopted the Federal Highway Administration's noise abatement criteria for noise standards.

State Department of Health Services, Office of Noise Control: California Code of Regulations, Title 24, Section 3501, Sound Transmission Control, identifies minimum noise insulation performance standards to protect persons within new hotels motels, dormitories, long-term care facilities, apartment houses, and dwellings other that detached single family dwellings from the effects of excessive noise. The Code requires that new residential structures located where CNEL or Ldn exceeds 60 dB(A) must have an acoustical analysis performed to ensure that the proposed design will limit the interior noise level to 45 dB(A) or below in any habitable room.

Federal Policies

In the case where federal agency approval or where federal funding is necessary for project implementation, compliance to the federal noise guidelines is required.

Federal Highway Administration
As a result of the Federal-Aid Highway Act of 1970, the Federal Highway Administration (FHWA) is concerned with traffic and construction noise associated with Federal-Aid Highways. In general, the noise policy is applicable to new highways, but the FHWA is also concerned with noise associated with changes to the horizontal or vertical alignment of existing highways. Sound levels up to 67 dBA Leq during the peak traffic hour are acceptable with residential uses. The principle mitigation measure has been placement of barriers at noise sensitive locations. For the City of Napa, FHWA guidelines could apply to any future changes along State Routes (SR) 29, 12 and 121.

Noise Control Act of 1972
The Noise Control Act of 1972 (PL 92-574) established a national policy "to promote an environment for all Americans free from noise that jeopardizes their public health and welfare." The Act provides for a division of powers between the Federal, state and local governments, in which the primary Federal responsibility is for noise source emission control, with the states and other agencies retaining the rights to control noise sources and the level of noise within their communities and jurisdiction.

Community Noise Levels in City of Napa

Sensitive Receptors

The primary noise sensitive land use in Napa are residents of the City. Residential land uses comprise approximately 55 percent of development in within the City's RUL. Residential uses are situated near many of the noise sources present in the City. In addition, motels, hotels, and transient lodging represents the second most abundant sensitive land use in Napa. Schools and parkland are also isolated locations where noise levels can negatively influence the functioning of their activities.

Existing Noise Sources

Noise sources in the City of Napa are typical of an urban and suburban environment. The major noise sources within Napa Valley are identified in the Noise Element, and include traffic on SR 29, the existing railroad, aircraft noise, vineyard frost fans, diesel pumps, and other machinery associated with vineyard operations. To a certain degree, construction equipment, commercial activities, industrial operations and power yard equipment also all influence the levels of community noise. Noise levels fluctuate throughout the day with the of amount of

community activity. Generally, automobiles are the dominant contributor to ambient noise levels in Napa Valley communities, including the City of Napa. Discussed below are the primary noise sources identified in the City of Napa through review of the 1992 Noise Element and 1994 field observations. The associated noise levels from these sources are also described.

Highway and Roadway Traffic

The major source of noise within the City of Napa is vehicular traffic, which includes automobiles, trucks, buses and motorcycles. The level of vehicular traffic noise varies with the volume of traffic, the percentage of trucks on the road, the speed of travel and the distance from the roadway. Based on these factors, higher noise levels are primarily generated from SR 29, Silverado Trail and Imola Avenue (SR 121), SR 221 and the local arterial roadway network.

A series of locations were selected for short-term measurement to characterize the range of transportation noise levels present in the City. All measurements were taken for one hour using a calibrated Larson-Davis Model 700 integrating sound level meter, which meets the American National Standards Institute (ANSI) requirements for a Type 2 meter. Figure HS-15 illustrates the locations of the measurements, while the results of the survey are presented in Table HS-7.

To supplement noise measurements, vehicular noise levels were estimated using the California Department of Transportation (Caltrans) Sound 32 Noise Prediction Model. To calculate vehicular noise levels, roadways determined to have an Average Daily Traffic Volume (ADT) of greater than 2,000 trips were input into the model along with an assumed vehicle mix and estimated average vehicle speed. The model did not account for the effects of roadway grade, stop and go conditions or the noise reduction effects of noise walls or intervening topography. Therefore, the existing noise levels summarized in Table HS-8 represent the worst-case noise levels. The table identified the approximate distance in feet from the roadway centerline to the unmitigated 60, 65, 70 and 75 dBA Ldn contour. The areas within each contour distance are exposed to noise levels of similar intensity.

The accuracy of traffic noise exposure predictions is generally no better than +/- 3 dBA. In the near vicinity of the source the accuracy may be within +/- 1 dBA, but, as the distance from the source increases, the accuracy may fall to +/- 5 dBA. In addition, situations outside of normal conditions may go counter to the contour lines. For example, a building located adjacent to an elevated freeway may have higher noise levels at the upper floors than at ground level. Also a row of houses can generally provide sound attenuation of as much as three to five decibels according to sound penetration studies. Walls and dense vegetation can further reduce noise levels.

The noise contours represented by the distances in Table HS-8 are a tool to be used in identifying areas with significant noise exposure as a result of vehicular activity.

In formulating noise and land use policy as part of *Envision Napa 2020*, this information may be used by the City of Napa planners for reviewing land use compatibility with the existing noise environment. A site-specific acoustical analysis should always be conducted for noise-sensitive developments whenever the modeled Ldn is greater than 60 dBA to comply with exterior and interior noise standards.

Railroad Activity

The Southern Pacific Railroad tracks bisect the City in a southeast-northwest direction. At present, noise generated along the Southern Pacific Railroad is limited to the Napa Valley Wine Train. The Wine Train serves the tourism throughout the Napa Valley and makes three round trips per day between Napa and St. Helena (Dowling 1992). The sound level from a Wine Train passby (100 to 130 second duration) was measured at 76 dBA at 30 feet from the tracks. The measured maximum sound level during the train passby was 86 dBA (ESA 1992). In addition to engine noise, safety devices such as warning horns and grades crossing bells contribute to the noise environment. Warning horns on diesel locomotives have been measured at 105 dBA at 50 feet perpendicular to the locomotive. Grade crossing bells have been measured at 70 dBA at 25 feet (Ogden 1990).

Airports

The City of Napa has no airport within its jurisdictional boundaries, however the Napa County Airport is situated approximately 7 miles south of the City. The noise effects of the airport on the City are minimal, as a result of the distance between the two. High altitude overflights by aircraft are a minimal source of noise in the City of Napa.

Commercial and Industrial Activity

Noise generated by commercial and industrial land uses varies with the type of business, the hours of operation and the distance from the noise sources. Commercial land uses in the City of Napa are auto repair shops, retail shopping centers, and food service located downtown along Silverado Trail, and Trancas Street, Imola Avenue, Jefferson Street, and Pueblo Avenue. Typical commercial noise sources include customer vehicles, delivery vehicles, equipment usage, and loading dock activities. No heavy industrial land uses exist in the City of Napa; Napa Pipe, a metal pipe manufacturing and storage facility, is situated in the County directly south of the City limits. Limited amounts of light industrial land uses
are present in various areas of the City.

Special Events

In the City of Napa, the venue for major community events is the Napa Fairgrounds, located in downtown between Silverado Trail and Soscol Avenue immediately south of Third Street. Community events are regularly scheduled at the fairgrounds throughout the year, including the Napa Town and County Fair in August. Within the fairgrounds, three stages are available for musical entertainment, of which the main grand stand seats the largest number of people. This main arena is situated near the center of the fairgrounds property. Events at the fairgrounds can include concerts, rodeos, and special events. Sound levels will depend on the nature of the event and the type of amplification provided. Sound levels were measured during an event which included live music. The measurement results are summarized in Table HS-9. .

Noise associated with fairground operations can vary depending on the type of entertainment, the amplification equipment utilized at the venue, the number of musicians, and other related factors. During the Napa Town and Country Fair, music was clearly audible near the closest residences along Fourth Street, Baily Street, Burnell Street and across Silverado Trail from the fairgrounds. Short-term (i.e., 15 minute) sound level measurements were taken in these areas to determine typical noise levels near the homes during community events (Table HS-9). In addition to music, contributing factors influencing ambient sounds in these areas included automobiles traveling to the fair and circling to park, visitors conversing nearby, and general community activities.

Table HS-7 Sound Level Measurements (dBA)						
Location Number	**Location Description**	**Leq**	**L10**	**L50**	**L90**	**Lmax**
1	Approximately 40 feet from the centerline of Soscol Avenue (3000 Block)	69	71	64	56	83
2	1625 Lincoln (Between Jefferson and SR29). Approximately 45 feet from centerline	70	72	65	53	82
3	Approximately 40 feet from centerline of Browns Valley Road near Westwood Hills Park	67	69	52	52	79
4	Approximately 65 feet from the centerline of Imola Avenue between S. Minahen and SR29 ramps	68	71	66	60	81
5	Approximately 25 feet from the centerline of Freeway Drive south of Old Sonoma Road and North of Imola Avenue	69	72	67	61	85
6	Approximately 40 feet from the centerline of the southwest corner of Solano Avenue and Kathleen Drive)	69	71	67	62	82

Source: Ogden, 1995.
Sound levels were measured on August 10 and 11, 1994.
All sound level measurements were conducted for a one-hour interval during peak traffic periods (6:30 am to 9:00 am or 3:00 pm to 6:30 pm.
To describe time-varying character of environmental noise, the statistical noise descriptors L_{10}, L_{50}, and L_{90} are commonly used. They are the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time. The Lmax is the maximum sound level measured during the measurement interval. A single descriptor called the Leq (equivalent sound level) is also used. Leq is the energy mean A-weighted sound level during a stated measured time interval.

Rural/Urban Limit ·····

Railroad ------

City of Napa General Plan | Noise.DS4 | 12/98

Figure - HS 15

Noise Measurement Locations

North

Location Numbers Correspond to Table HS-8

725' 1/2 Mile 1 Mile 3 Miles

0

Source: Ogden

envision NAPA 2020

Table HS-8
City of Napa Existing 1992 Roadway Noise Contours

Roadway Segment	ADT	Average Vehicle Speed	SPL at 50 feet	Perpendicular Distance from Roadway Centerline to Contour in feet (hard/soft)[1] 75 CNEL	70 CNEL	65 CNEL	60 CNEL
State of California Highways/Freeways							
SR 29							
Southern city limits to Trower	31600	60	77.6	90/74	287/160	909/345	2877/745
Trancas to Trower	26600	60	76.8	75/65	239/142	756/305	2393/659
Trower - northern city limits	24100	55	75.4	54/53	173/114	548/246	1733/531
SR 12 w/o SR 29	20700	55	74.6	-	144/101	456/218	1442/470
SR 121							
Silverado Trail s/o First Street	8200	35	65.7	-	-	58/55	185/119
Silverado Trail - First to Lincoln	11300	35	67.3	-	-	84/71	268/153
Silverado Trail n/o Lincoln	9500	35	66.4	-	-	69/61	218/133
SR 221 s/o Imola	25700	50	74.7	-	147/102	466/221	1475/477
Major Arterials							
Jefferson Street - Fifth to Trower Ave.	18500	35	69.7	-	-	147/102	466/221
Soscol Ave. - Silverado Trail to Trancas St.	22300	35	70.6	-	57/54	181/118	574/254
Redwood Road - Dry Creek Rd. to SR 29	14000	35	68.3	-	-	106/82	338/178
Trancas St. - SR 29 to eastern city limits	21800	35	70.5	-	56/53	177/116	561/250
Lincoln Ave. - SR 29 to Silverado Trail	7800	35	65.5	-	-	56/53	177/116
First Street - Browns Valley Rd. to California Blvd.	17500	35	69.4	-	-	137/98	435/211
Imola Ave. - SR 29 to Soscol Ave.	20000	35	70.1	-	51/50	161/109	511/235
Minor Arterials							
Dry Creek Rd. - Redwood Rd. to Trower Ave.	3900	30	61.8	-	-	-	75/65
Jefferson St. - Trower Ave. to Salvador Ave.	2900	30	60.5	-	-	-	56/53
Jefferson St. - Fifth St. to southern terminus	17000	30	68.6	-	-	114/86	362/187
Big Ranch Road - Trancas St. to northern city limits	6300	30	63.9	-	-	-	122/90
Browns Valley Rd. - Redwood Rd. to First St.	15600	30	68.2	-	-	104/81	330/176
Main Street - Fifth Street to Pearl St.	7200	30	64.5	-	-	-	140/99
Salvador Ave. - Linda Vista Ave. to Big Ranch Rd.	2900	30	60.5	-	-	-	56/53
Trower Ave. - Dry Creek Rd. to Sierra Ave.	5400	30	63.2	-	-	-	104/81
Redwood Rd. - western city limits to Dry Creek Rd.	5900	30	63.6	-	-	-	114/86
First Street - Silverado Trail to California Blvd.	17500	30	68.8	-	-	119/89	379/193
Second St. - California Blvd. to Main St.	13900	30	67.6	-	-	90/74	287/160
Third St. - Silverado Trail to California Blvd.	9900	30	66.0	-	-	62/58	199/125
Coombsville Rd. - Silverado Trail to eastern city limits	6300	30	63.9	-	-	-	122/90
Fourth St. - Third Street to Coombs St.	4300	30	62.2	-	-	-	82/70

Table HS-8 (cont.)
City of Napa Existing 1992 Roadway Noise Contours

Roadway Segment	ADT	Average Vehicle Speed	SPL at 50 feet	Perpendicular Distance from Roadway Centerline to Contour in feet (hard/soft)[1]			
				75 CNEL	70 CNEL	65 CNEL	60 CNEL
Minor Arterials (continued)							
Old Sonoma Rd. - western city limits to Jefferson St.	5600	30	63.4	-	-	-	109/84
Imola Ave. - Foster Rd. to SR 29	7600	30	64.8	-	-	-	150/104
Imola Ave. - SR 221 to eastern city limits	5000	30	62.9	-	-	-	97/78
Collectors							
Austin Way / Pinewood Drive	1500	25	56.5	-	-	-	-
Beard Rd.	*	*					
Brown St. - Vallejo St. to Coombs St.	*	*					
Browns Valley Rd. - Buhman Ave. to Redwood Rd.	2100	25	57.8	-	-	-	-
Buhman Ave.	4600	25	61.1	-	-	-	64/59
Byway East	300	25	51.4	-	-	-	-
California Blvd. / Ornduff St.	10000	25	64.7	-	-	-	147/102
Calistoga St.	5300	25	61.8	-	-	-	75/65
Clark St.	2500	25	58.5	-	-	-	-
Coombs St. - Brown St. to Imola Ave.	7800	25	63.5	-	-	-	111/85
Dry Creek Rd. - RUL Line to Trower Ave.	1000	25	55.0	-	-	-	-
East Ave.	2500	25	58.5	-	-	-	-
El Centro Ave.	1800	25	57.2	-	-	-	-
Fifth St. - Coombs St. to Main St.	*	*					
Foothill Blvd.	1000	25	55.0	-	-	-	-
Foster Rd.	1900	25	57.4	-	-	-	-
Franklin St.	*	*					
Golden Gate Dr.	300	25	51.4	-	-	-	-
Kansas Ave.	3600	25	60.1	-	-	-	51/50
Laurel St.	1200	25	55.6	-	-	-	-
Linda Vista Ave.	4800	25	61.3	-	-	-	67/61
Main St. - Pueblo Ave. to Pearl St.	5300	25	61.8	-	-	-	75/65
Montecito Blvd.	*	*					
Orchard Ave.	1600	25	56.7	-	-	-	-
Partrick Rd.	*	*					
Pearl St.	5300	25	61.8	-	-	-	75/65
Pueblo Ave.	7800	25	63.5	-	-	-	111/85
Randolph St. - Pearl St. to Fourth St.	*	*					
Robinson Ln.	500	25	52.7	-	-	-	-
Seminary St. - Calistoga St. to Third St.	*	*					
Sierra Ave.	6000	25	62.3	-	-	-	84/71
Shetler Ave.	*	*					
Shurtleff Ave.	1700	25	57.0	-	-	-	-
Solano Ave.	3200	25	59.6	-	-	-	-
Sousa Ln.	1200	25	55.6	-	-	-	-
Spruce St.	*	*					
Stanley Ln.	*	*					

Table HS-8 (cont.)
City of Napa Existing 1992 Roadway Noise Contours

Roadway Segment	ADT	Average Vehicle Speed	SPL at 50 feet	Perpendicular Distance from Roadway Centerline to Contour in feet (hard/soft)(†)			
				75 CNEL	70 CNEL	65 CNEL	60 CNEL
Collectors (continued)							
Terrace Dr.	400	25	52.1	-	-	-	-
Terra Verde Dr.	*	*					
Thompson Ave.	1300	25	55.9	-	-	-	-
Vallejo St.	*	*					
Walnut St.	*	*					
West Pueblo Ave.	2700	25	58.8	-	-	-	-
West Salvador Dr. (now Wine Country Dr.)	1500	25	56.5	-	-	-	-
Westview Dr.	3200	25	59.6	-	-	-	-
Yajome St.	*	*					

All Sound Pressure Levels (SPLs) given in A-weighted decibels or dBA. Contour lines given to nearest foot.
Calculated using an assumed vehicle mix of 96% Cars, 2% Med. Trucks, 2% Heavy Trucks. Free flow vehicle speeds utilized.

(†): Assumed to be line-of-sight distance. Upper values indicate hard-site propagation distance, lower values indicate soft-site propagation distance.
(*): Traffic data not available.
(-): Noise contour is coincident with traffic right-of-way taken as 50 feet from centerline.
Traffic Data Source: Dowling Associates. Inc., 1996.

Table HS-9
Concert Sound Level Measurements (dBA)

Location Description	Leq	L10	L50	L90	Lmax
Approximately 20 feet from the speakers at the fairgrounds property boundary *	78	82	76	69	89
Corner of Fourth and Baily Streets **	67	69	66	62	73

Source: Ogden, 1995.
Sound levels were measured on August 11, 1994, at the Napa Town and Country Fair for a 15 minute interval.
* Irish folk ballads were being performed at the Wine Garden Stage. The speakers were facing east.
** The sound level measurement was taken outside the fairgrounds. A jazz performance was taking place on-stage.

End of Chapter 8

Envision Napa 2020
City of Napa General Plan

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